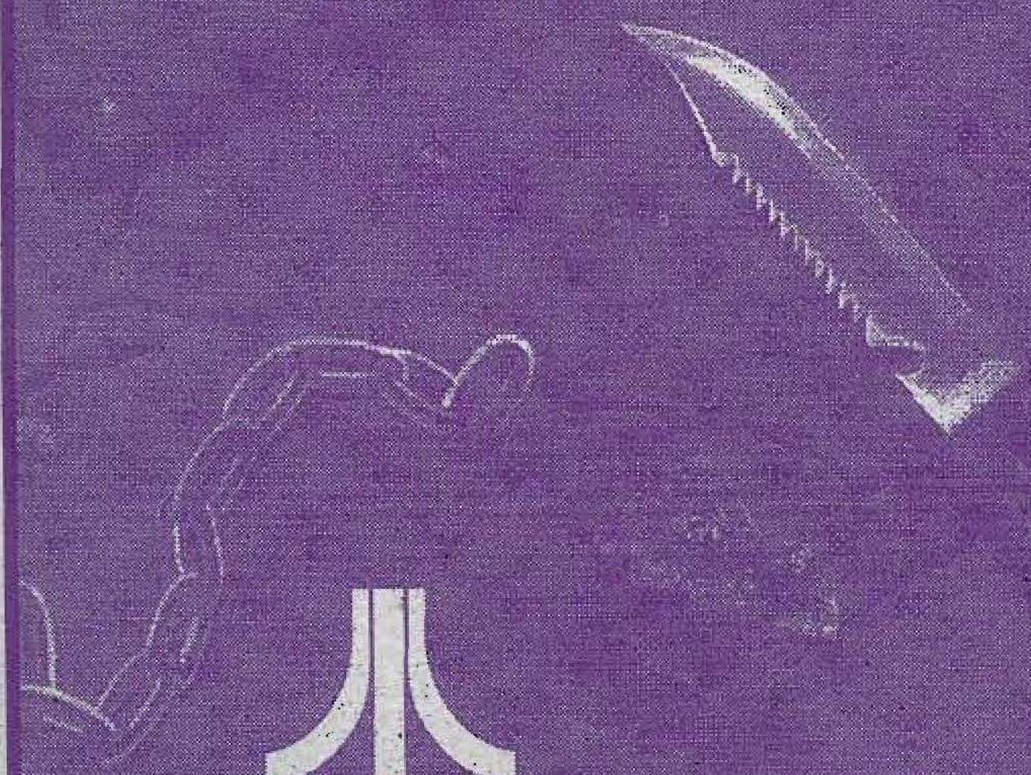
TM-375
1st printing

GUARDIANS™

OF THE 'HOOD



ATARI®
GAMES

OPERATOR'S MANUAL

For technical assistance:

If reading through this manual does not lead to solving your game maintenance or repair problem, call TELE-HELP® at one of these Atari Games Customer Service offices:

UNITED STATES

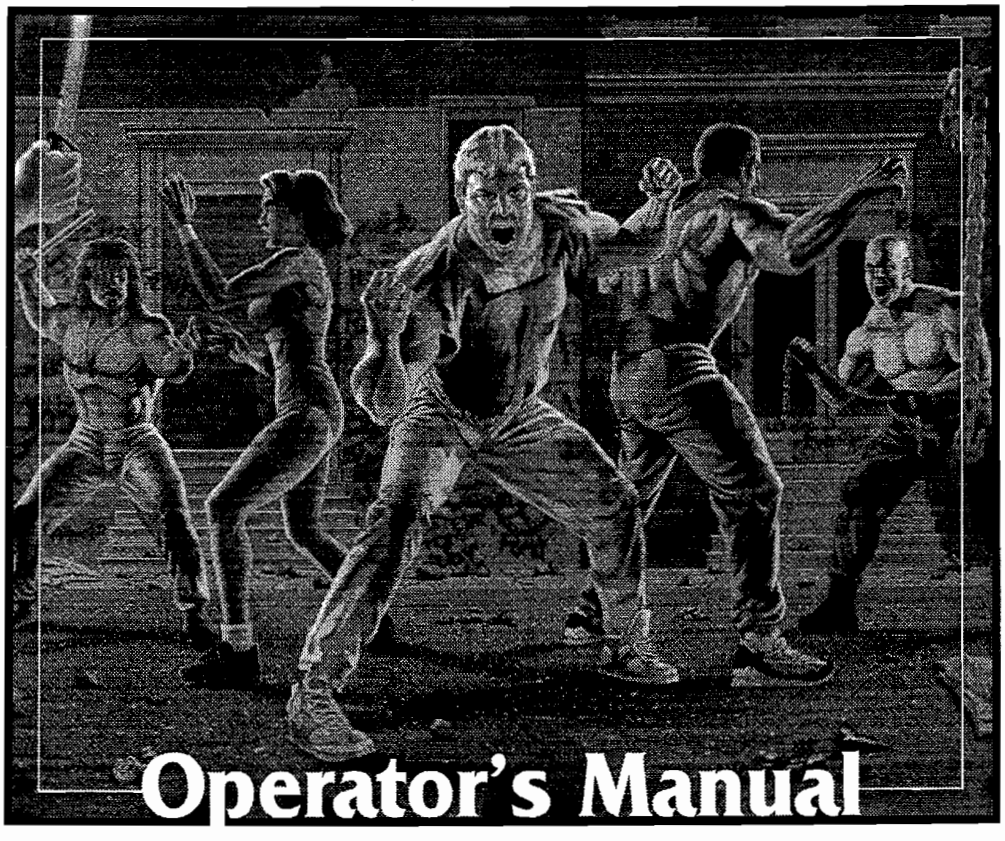
Atari Games Corporation
California Customer Service Office
737 Sycamore Drive
Milpitas, CA 95036-1110
Fax (408) 434-3945
Telex 5101007850
✆ (408) 434-3950
(Monday–Friday, 7:30 a.m.–4:00 p.m. Pacific time)

EUROPE

Atari Games Ireland Limited
European Customer Service Office
Tipperary Town, Ireland
Fax 062-51702
Telex 70665
✆ 062-52155
(Monday–Friday, 9:00 a.m.–5:30 p.m. GMT)

GUARDIANS™

OF THE 'HOOD



Operator's Manual

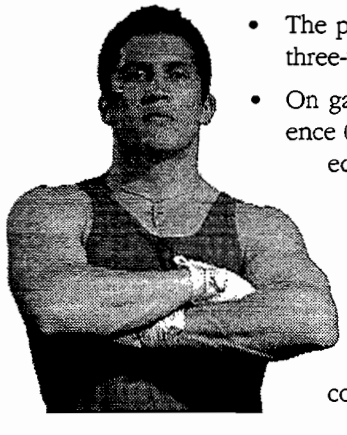
with Schematics

ATARI®
GAMES

Published by:
Atari Games Corporation
675 Sycamore Drive
P.O. Box 361110
Milpitas, California 95036

Printed in the U.S.A. **2/92**

Produced by the Atari Games Technical Publications Department.
Writing & Editing: Andrea Dencker
Illustration & Design: Mary Ohanessian Sumner



NOTICE RE. NON-ATARI® PARTS

WARNING

Use of non-Atari parts or modifications of any Atari game circuitry may adversely affect the safety of your game, and may cause injury to you and your players.

You may void the game warranty (printed on the inside back cover of this manual) if you do any of the following:

- Substitute non-Atari parts in the game.
- Modify or alter any circuits in the game by using kits or parts *not* supplied by Atari Games Corporation.

NOTE

This equipment generates, uses, and can radiate radio frequency energy, and if not installed and used in accordance with the instruction manual, may cause interference to radio communications. It has been tested and found to comply with the limits for a Class A computing device pursuant to Subpart J of Part 15 of Federal Communications Commission (FCC) Rules, which are designed to provide reasonable protection against such interference when operated in a commercial environment. Operation of this equipment in a residential area or modification to this equipment is likely to cause interference, in which case the user, at his own expense, will be required to take whatever measures may be required to correct the interference. If you suspect interference from an Atari game at your location, check the following:

- All ground wires in the game are properly connected as shown in the game wiring diagram.
- The power cord is properly plugged into a grounded three-wire outlet.
- On games provided with an Electromagnetic Interference (EMI) ground plane, be sure that the game printed-circuit boards (PCBs) are properly installed on the EMI ground plane and that the end board is securely installed with **all** screws in place and tightened.

If you are still unable to solve the interference problem, please contact Customer Service at Atari Games Corporation. See the inside front cover of this manual for service in your area.

SAFETY SUMMARY

The following safety precautions apply to all game operators and service personnel. Specific warnings and cautions will be found in this manual whenever they apply.

WARNING

Properly Ground the Game. Players may receive an electrical shock if this game is not properly grounded! To avoid electrical shock, do not plug in the game until it has been inspected and properly grounded. This game should only be plugged into a grounded three-wire outlet. If you have only a two-wire outlet, we recommend you hire a licensed electrician to install a three-wire grounded outlet. If the control panel is not properly grounded, players may receive an electrical shock! After servicing any part on the control panel, check that the grounding wire is firmly secured to the control panel. After you have checked this, lock up the game.

AC Power Connection. Before you plug in the game, be sure that the game's power supply can accept the AC line voltage in your location. The line voltage requirements are listed in the first chapter of this manual.

Disconnect Power During Repairs. To avoid electrical shock, disconnect the game from the AC power before removing or repairing any part of the game. If you remove or repair the video display, be very careful to avoid electrical shock. High voltages continue to exist even after power is disconnected in the display circuitry and the cathode-ray tube (CRT). Do not touch the internal parts of the display with your hands or with metal objects! Always discharge the high voltage from the CRT before servicing it. Do this after you disconnect it from the power source. First, attach one end of a large, well-insulated, 18-gauge jumper wire to ground. Then momentarily touch the free end of the grounded jumper wire to the CRT anode by sliding the wire under the anode cap. Wait two minutes and do this again.

Use Only Atari Parts. To maintain the safety of your Atari game, use only Atari parts when you repair it. Using non-Atari parts or modifying the game circuitry may be dangerous, and could injure you and your players.

Handle the CRT With Care. If you drop the CRT and it breaks, it may implode! Shattered glass from the implosion can fly six feet or more.

Use the Proper Fuses. To avoid electrical shock, use replacement fuses which are specified in the parts list for this game. Replacement fuses must match those replaced in fuse type, voltage rating, and current rating. In addition, the fuse cover must be in place during game operation.

CAUTION

Properly Attach All Connectors. Make sure that the connectors on each printed circuit board (PCB) are properly plugged in. The connectors are keyed to fit only one way. If they do not slip on easily, do not force them. If you reverse a connector, it may damage your game and void your warranty.

Ensure the Proper AC Line Frequency. Video games manufactured for operation on 60 Hz line power (used in the United States) must not be operated in countries with 50 Hz line power (used in Europe). If a 60 Hz machine operates on 50 Hz line power, the fluorescent line ballast transformer will overheat and cause a potential fire hazard. Check the product identification label on your machine for the line frequency required.

ABOUT NOTES, CAUTIONS, AND WARNINGS

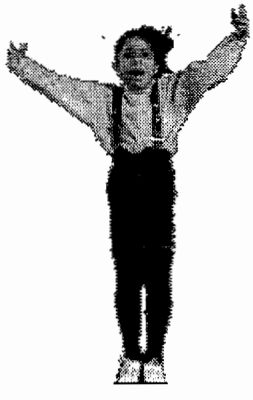
In Atari publications, notes, cautions and warnings have the following meaning:

NOTE — A highlighted piece of information.

CAUTION — Equipment and/or parts can be damaged or destroyed if instructions are not followed. You will void the warranty on Atari printed-circuit boards, parts thereon, and video displays if equipment or parts are damaged or destroyed due to failure of following instructions.

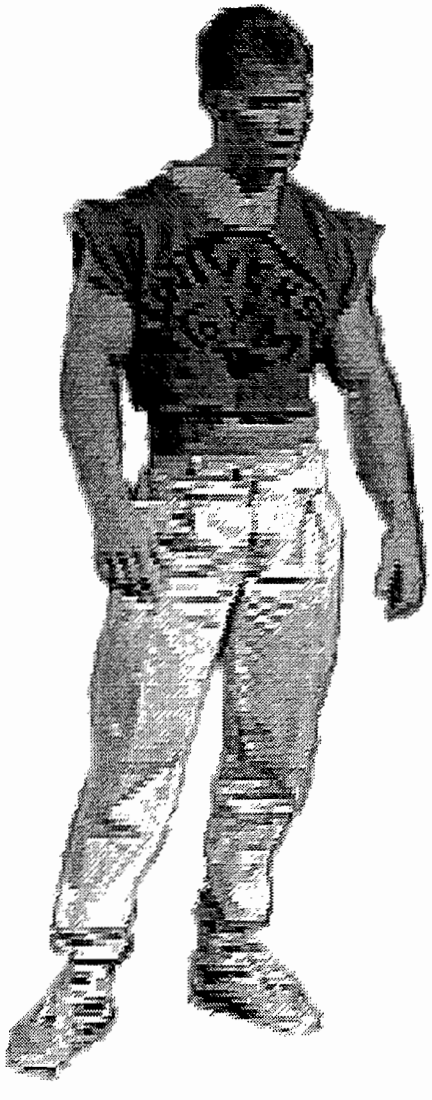
WARNING — Players and/or technicians can be killed or injured if instructions are not followed.

CONTENTS

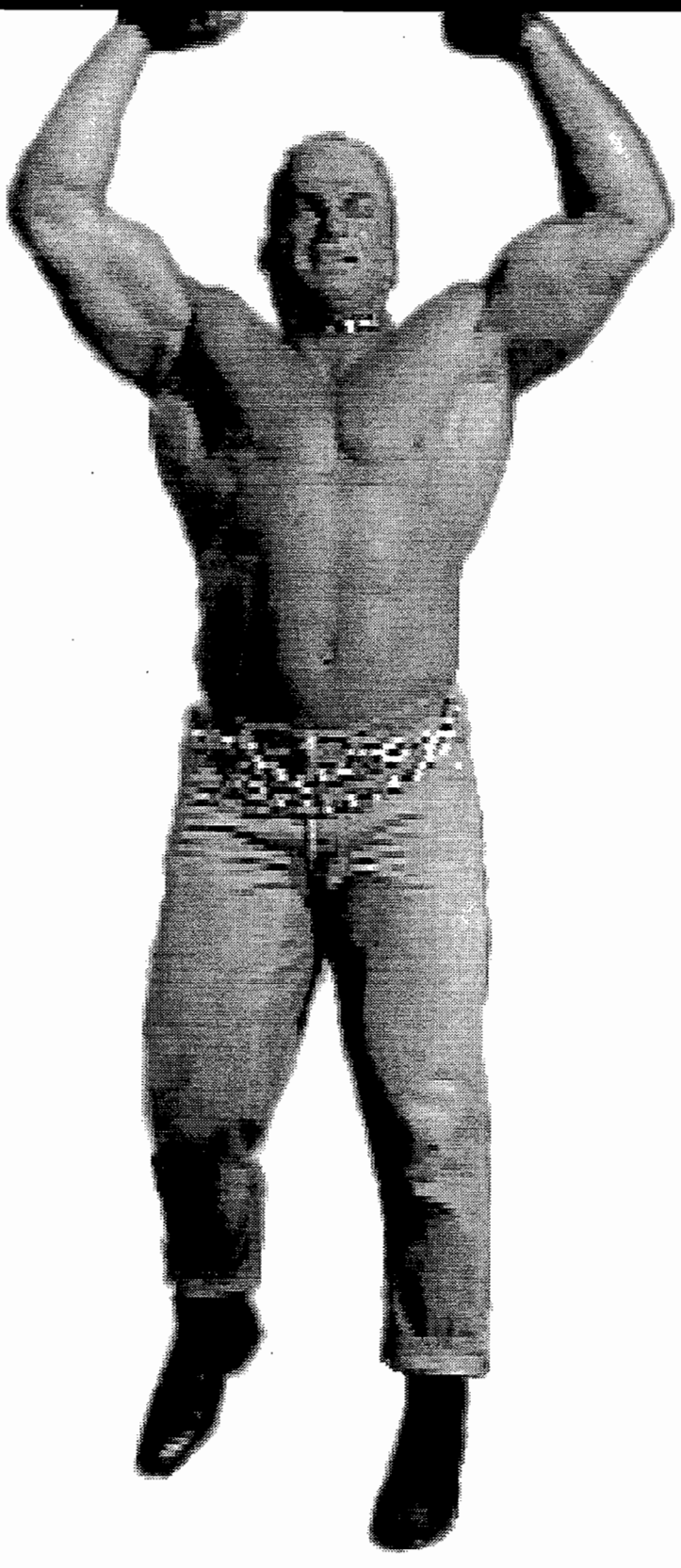


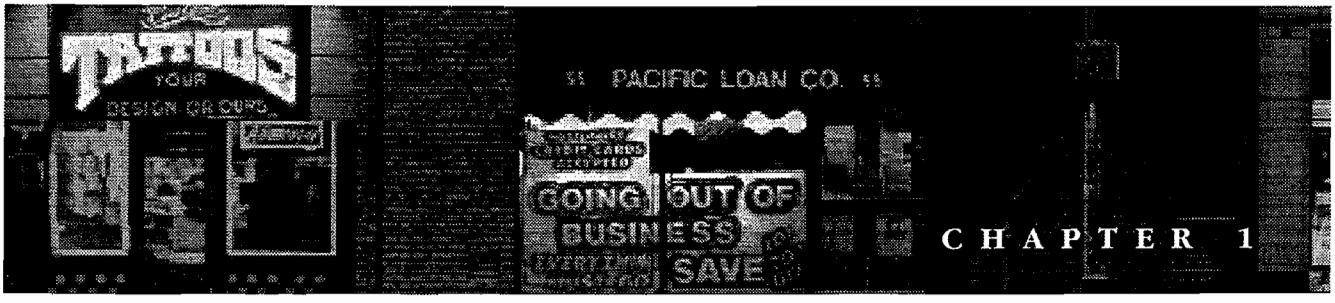
ILLUSTRATIONS

TABLES



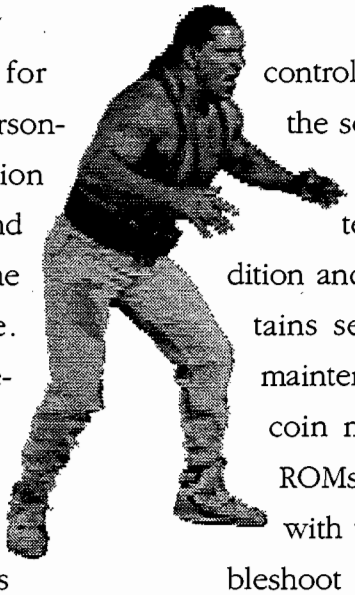
NOTES





Set-Up

How to Use This Manual



THIS MANUAL IS written for operators and service personnel. It provides information for setting up, playing, testing, and maintaining your Guardians of the 'Hood™ (neighborhood) game. Guardians of the 'Hood is a one- or two-player fighting game with two sets of controls and 3-D digitized video. The game provides photographically real views of a seedy inner city. ☆ Chapter 1 contains set-up and game play information. ☆ Chapter 2 contains a description of the self-test procedures. The self-test is important in the Guardians of the 'Hood game. You can troubleshoot the PC boards, main circuits, and controls using the more than 11 screens in the self-test. You should regularly test the boards and controls with the self-test to keep your game in peak condition and at top earnings. ☆ Chapter 3 contains several troubleshooting tables, plus maintenance and repair procedures for the coin mechanism, video display, joystick, ROMs and RAMs. If you have problems with your game, use this chapter to troubleshoot and to repair it. Be sure to perform the preventive maintenance tasks to keep your game in good condition. ☆ Chapter 4 contains the illustrations and PCB parts lists. ☆ Chapter 5 contains the schematics for the game and audio PCBs and the game wiring diagram.

Operating the Game

To operate your game for maximum income, you should regularly do the automated self-test and check the controls with the *Control Inputs* screen in the self-test. By using the self-test regularly, you can find and fix problems immediately. This lets you keep your game in top condition.

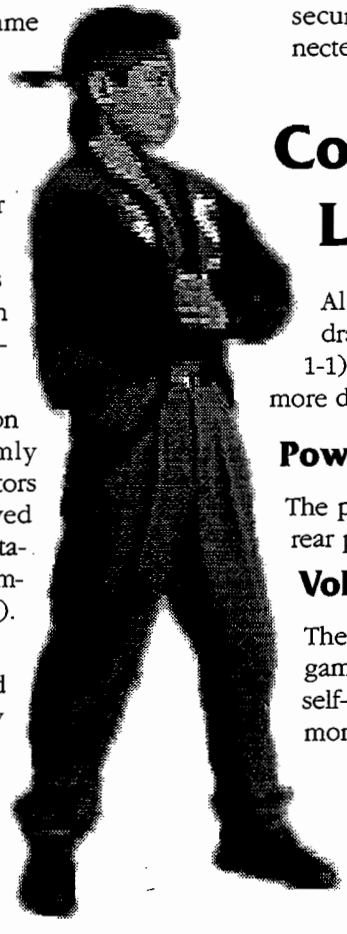
Inspecting the Game

WARNING

To avoid electrical shock, do not plug in the cabinet until it has been properly inspected and set up for the line voltage in your area.

This cabinet should be connected to a grounded three-wire outlet only. If you have only two-wire outlets, we recommend that you hire a licensed electrician to install grounded outlets. Players can receive an electrical shock if the cabinet is not properly grounded.

Inspect your Guardians of the 'Hood game carefully to ensure that the game is complete and was delivered to you in good condition.



Inspect the cabinet and seat as follows:

1. Examine the exterior of the cabinet for dents, chips, or broken parts.
2. Open the upper and lower rear access panels. Unlock and open the coin doors. Inspect the interior of the cabinet as follows:
   a. Check that all plug-in connectors on the cabinet harnesses are firmly plugged in. Do not force connectors together. The connectors are keyed so they fit only in the proper orientation. A reversed connector can damage a printed-circuit board (PCB). This will void your warranty.
   b. Ensure that all plug-in integrated circuits on each PCB are firmly plugged into their sockets.
   c. Inspect the power cord for any cuts or dents in the insulation.
   d. Inspect the power supply. Make sure that the correct fuses are installed. Check that the harness is plugged in correctly and that the fuse block cover is mounted in place. Check that the green ground wires are connected.
   e. Inspect other sub-assemblies, such as the video display, controls, printed-circuit boards (PCBs), and speakers. Make sure that they are mounted securely and that the ground wires are connected.

Characteristic	Specification
Power Consumption	150 W maximum
Line Fuse Rating	3 Amps
Line Voltage	102 to 132 VAC
Temperature	5° to 38° C (37° to 100° F)
Humidity	Not to exceed 95% relative
Width	33.25 inches (84 cm)
Depth	38.25 inches (97 cm)
Height	71.75 inches (182 cm)
Weight	325 lbs. (148 kg)

Table 1-1 Game Specifications

Control and Switch Locations

All of the controls are located inside the drawer or behind the coin doors (see Figure 1-1). The following describes the locations in more detail:

Power On/Off Switch

The power on/off switch is located at the upper rear panel of the cabinet, above the rear door.

Volume Control

There is no volume adjustment knob on this game's PCB. Instead, volume is adjusted in the self-test. Refer to Chapter 2 of this manual for more information.

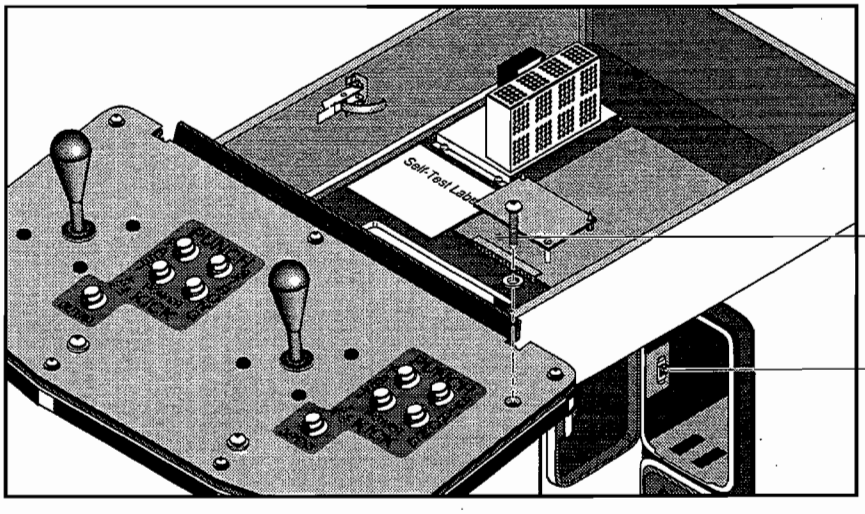


Figure 1-1 Self-Test Switch Locations

Self-Test Switch

The primary self-test switch is conveniently located inside the upper coin door (inside the left edge of the opening).

Coin Counter

The coin counter is located on the bottom right edge of the coin box, inside the lower coin door.

Installing the Control Panel

Make sure the game power is turned off. To install the separately packaged control panel, you need the following tools:

- Hex driver or wrench
- Four flat washers (provided with game)
- Four nut/washer assemblies (provided with game)

1. Reach in through the openings on the front of the drawer, and open the spring draw latch on each side. Pull the drawer out partly (see Figure 1-1).
2. Hold the control panel up to the front of the drawer, and match up the four threaded studs with the four small holes (one in each corner).
3. Install one flat washer and nut/washer assembly onto each threaded stud.
4. Plug the two control panel harness connectors into the game harness inside the drawer. These connectors are keyed, so you should be able to determine which ones connect together.
5. Close the drawer and snap shut both latches.
6. Turn on the game power. Check that the video display and the attraction lamp have power.

Setting the Coin and Game Options

The Guardians of the 'Hood coin and game options are set in the self-test. Refer to Chapter 2 for the recommended settings and the procedure for setting the options.

Game Play

This section describes the features and play of the Guardians of the 'Hood game.

Introduction

The place is Center City. An escalating crime rate has converted a once-peaceful town into a seedy hangout for gangs and hoodlums.

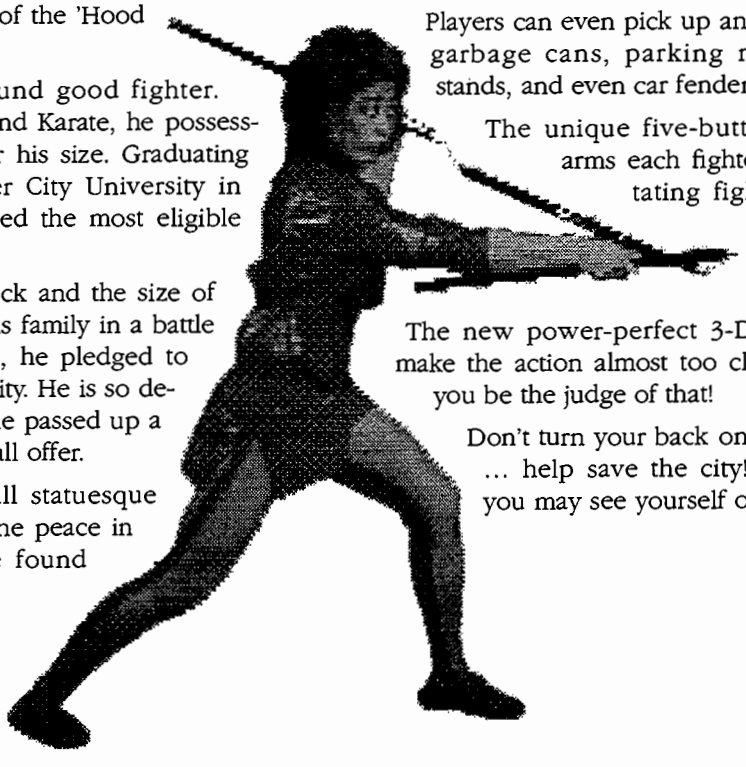
Three gangs have taken over the town — the Dreads, the Shavers, and the Dragons. Each gang has an evil boss that rules over them. The plan for the Guardians of the 'Hood is to break up the gangs and convert the bosses to their side. Only this way can they turn the tide and regain the city. In the end, the secretive "Mr.. Big" unveils his true identity, that will surely surprise every player.

The local gym has become a meeting spot for a band of young citizens called the Guardians of the 'Hood. Here they work out and train with each other to keep their fighting skills razor sharp and instincts cat-like keen. Each could be registered as a lethal weapon, and united their fires burn hotter than boiling lava and pump up to the strength of one hundred men.

Game Characters

The characters in Guardians of the 'Hood are:

- CONNER — An all-around good fighter. Trained in both boxing and Karate, he possesses amazing quickness for his size. Graduating with honors from Center City University in medicine, he is considered the most eligible bachelor of the town.
- CHIEF — Tough as a truck and the size of three men. After losing his family in a battle between two rival gangs, he pledged to bring back peace to the city. He is so devoted to the cause, that he passed up a multi-million-dollar football offer.
- TANYA — She is the tall statuesque cat. When not securing the peace in Center City, she can be found adorning the covers of major fashion magazines. Her father's duty in Special Forces influenced her interest in the martial arts. She possesses black belts in Tai-Chi, Tae Kwon Do, and Kung Fu.
- JAVIER — He is a gold-medal winner in kickboxing. His natural speed and agility aided his ability to be a multi-sport athlete. After the Guardians of the 'Hood clean up the city, he plans to return to his shortstop position on the Center City Bashers.



Game Play

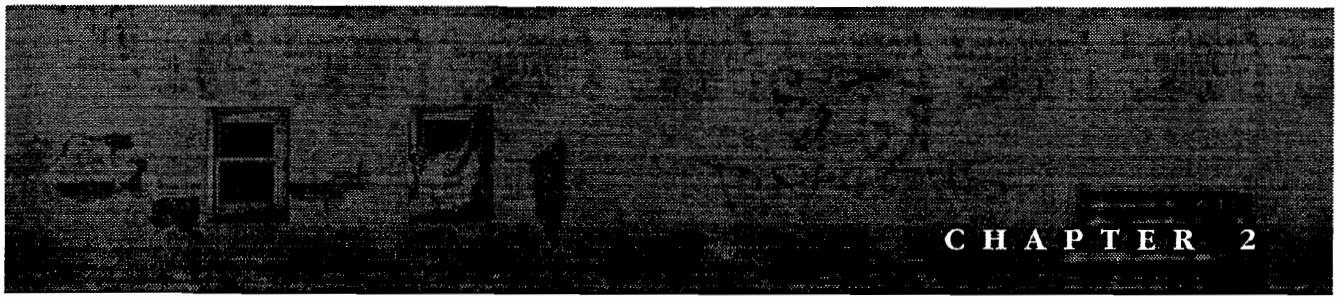
Guardians of the 'Hood is a two-player game full of hard-hitting action. Players wage the war against crime with four powerful fighters. As players punish rival gang bosses and convert them to their side, the selection of player characters increases. There's seven in all! From closed-in Gym Waves to wide-open street scenes, Guardians of the 'Hood gives players the best of both worlds ... head-to-head and side-scrolling game play. Meet head-on with gangs who make bad streets, back alleys, and subway stations their domain to prey on the weak!

Players can even pick up and use street junk like garbage cans, parking meters, newspaper stands, and even car fenders!

The unique five-button/joystick control arms each fighter with many devastating fighting moves. There are lots of hidden moves for players to discover!

The new power-perfect 3-D digitized graphics make the action almost too close for comfort! But you be the judge of that!

Don't turn your back on those that need you ... help save the city! Who knows, hero, you may see yourself on the front page!

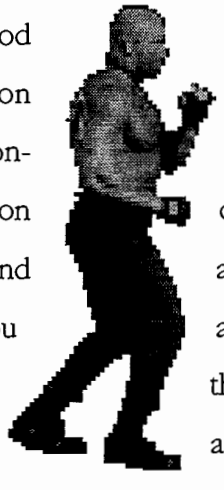


CHAPTER 2

Self-Test

Introduction

USE THE Guardians of the 'Hood self-test to check the condition of the game circuitry and controls. You will see the self-test information on the video display and hear the sound test information through the speakers. You do not need any additional equipment to perform the self-test. Perform the self-test when you first set up the game, each time you collect the money, or when you suspect game problems. This chapter shows the screens in the self-test and explains each of the tests. The screens and explanations are arranged in the order they appear in the self-test. Table 2-1 lists all the self-test screens.



Entering and Exiting the Self-Test

This game has two self-test switches. The primary one is conveniently located inside the upper coin door (inside the left edge of the opening). The secondary self-test switch is located on the JSA Audio III PCB, in the drawer behind the control panel.

To enter the self-test, turn on the self-test switch inside the upper coin door. Doing so displays the Select Test menu (entitled "Self Test"); see Figure 2-1. Exit the self-test by turning off the self-test switch at any time.

RAM and ROM Test

When you turn on the power, the game automatically runs through the random-access memory (RAM) and read-only memory (ROM) test. This test is not part of the self-test procedure. Regardless of whether or not the game has a problem, it will always advance to the attract mode. The game will stop only if you power it up and the self-test switch has been previously turned on.

Game RAM Test

No message appears while the test is checking the RAMs. If more than 30 seconds elapse and the self-test menu doesn't appear, the game has a problem. See Table 2-2 for the locations of bad RAMs. If the test finds no RAM errors, no message appears and the program goes to the ROM test after 15–20 seconds.

Game ROM Test

If the test finds no ROM errors, no message appears and the program goes to the title screen in the attract mode. If a ROM fails, a message is displayed. Furthermore, if the failed ROM is a program ROM, then the error number with checksums is shown in the center of the screen. The ROM error test takes a few seconds. See Table 2-3 for the location of bad ROMs.

If you think you have a ROM error, but the screen shows no messages, see Table 3-3 for information about the locations of various ROM functions.

Depending on how bad the ROM error is, you may not be able to enter the self-test.

Self Test (Select Test Menu)
Switch Test
Volume Adjust
Sound Test
Coin Options
Game Options
Game Statistics
Alpha(numeric) Test
Motion Object Test
Playfield Test
Color Test First Color Test Second Color Test Red Color Purity Green Color Purity Blue Color Purity White Color Purity Grey Color Purity
Convergence Test White Convergence Violet Convergence Blue Convergence Yellow Convergence

Table 2-1 Summary of All Self-Test Screens

Select Test Menu

Choose which test or screen you want to see from this menu, shown in Figure 2-1. Move up and down the menu using any joystick. Start the selected test by pressing any Defend button.

	RAM Location	
Error Address	High	Low
FE8000 (Color RAM)	3C	2C
FF0000 (Video RAM)	17N	15N

Table 2-2 Bad RAM Location by Error Address

	ROM Location	
Error Address	High	Low
000000	8D	8C
020000	9D	9C

Table 2-3 Bad ROM Location by Error Address

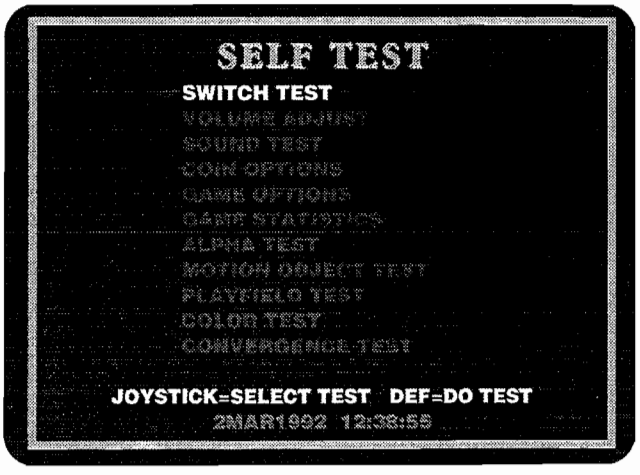


Figure 2-1 Select Test Menu Screen

Switch Test

The switch test screen for a two-player game is shown in Figure 2-2. Test the joysticks and pushbutton switches. As you use each control, the pink Xs for the pushbuttons change to 0s, or the joystick switch markers (small yellow dots) are highlighted. If the changes do not appear on the screen, check the switch wiring and the switches.

NOTE

The coin mechanisms are checked in the Sound test. See the section that follows.

Press the Punch and Kick buttons simultaneously to return to the select test menu.

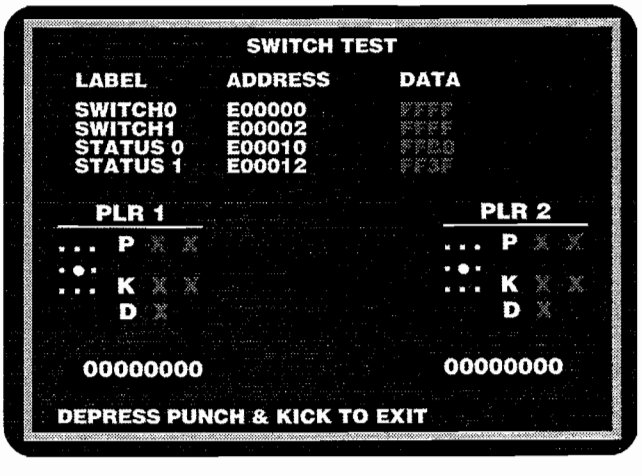


Figure 2-2 Switch Test Screen

Volume Adjust

Adjust the volume of the game using this screen, shown in Figure 2-3. Follow the instructions at the bottom of the screen to change the volume, to restore the old volume level, and to save the new volume and return to the select test menu.

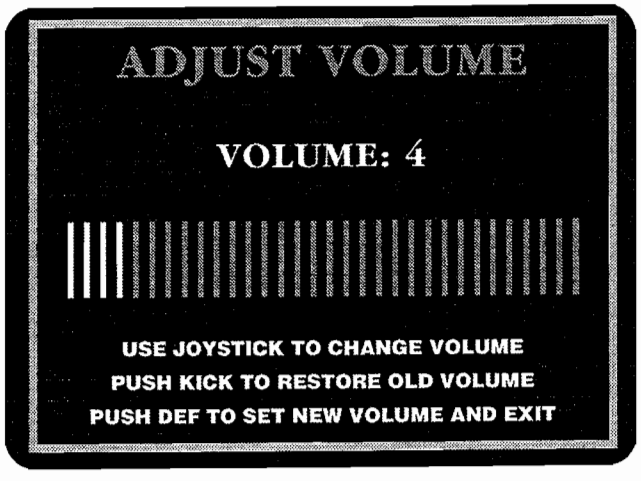


Figure 2-3 Volume Adjust Screen

Sound Test

The sound test indicates the condition of the sound effects circuit on the game PCB. The sound test screen appears in Figure 2-4.

Use one of the joysticks to select from the sounds; press one of the Punch buttons to listen to it. (You can have numerous sounds playing simultaneously, or you

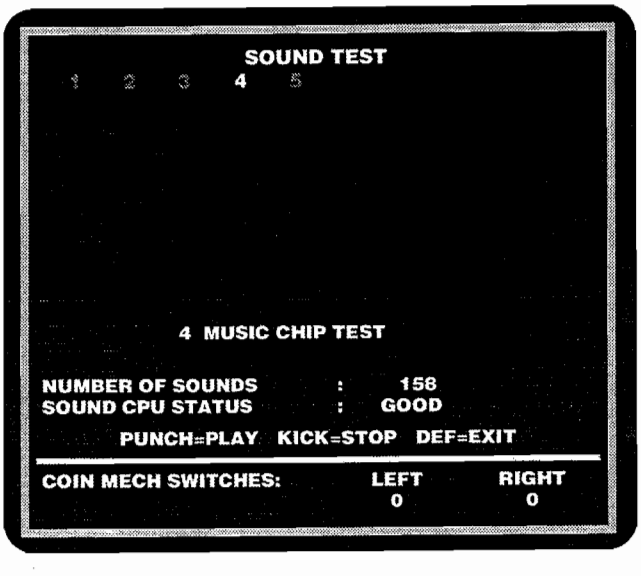


Figure 2-4 Sound Test Screen

Option	Available Settings	Explanation
Free Play	No ✔ Yes	Lets you choose free play to demonstrate the game.
Discount to Continue	No ✔ Yes	If set to *Yes*, this option reduces by 50% the player's cost to continue a game (always rounded up to the next full coin).
Game Cost	1 coin 1 credit ✔ 2 coins 1 credit ... 8 coins 1 credit	The number of coins required for one credit.
Bonus for Quantity Buy-in	None ✔ 2 coins give 1 3 coins give 1 3 coins give 2 4 coins give 1 ... 9 coins give 2 9 coins give 3	Lets you choose from various kinds of bonuses or no bonus.
Right Mech Value	1 coin counts as 1 coin ✔ 1 coin counts as 2 coins ... 1 coin counts as 7 coins 1 coin counts as 8 coins	The number of coins each coin counts as in the right coin mechanism.
Left Mech Value	1 coin counts as 1 coin ✔ 1 coin counts as 2 coins ... 1 coin counts as 7 coins 1 coin counts as 8 coins	The number of coins each coin counts as in the left coin mechanism.

✔ *Manufacturer's recommended settings*

Table 2-4 Coin Option Settings

can have silence, depending on which ones you select.) Pressing any Defend button returns you to the select test menu.

Coin Options

Check and select the coin options on this screen, shown in Figure 2-5. The screen shows the factory default settings in green.

To move through the options, to change or save the settings, or to return to the select test menu, follow the instructions shown at the bottom of the screen. The coin option settings, with defaults, are shown and explained in Table 2-4.

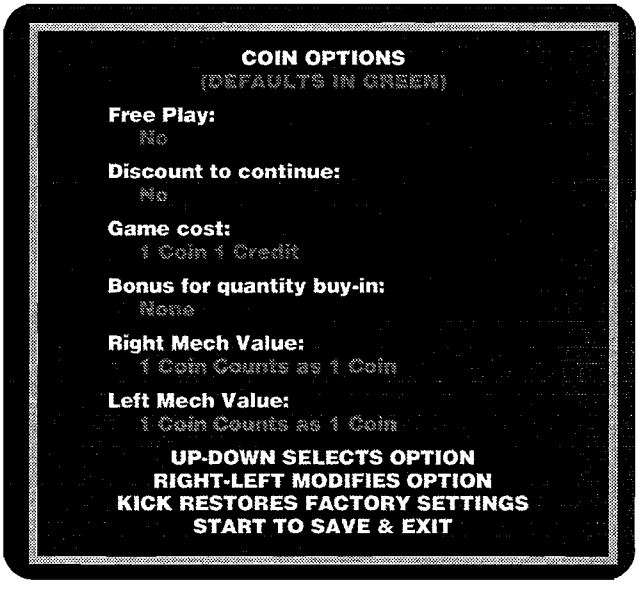


Figure 2-5 Coin Options Screen

Option	Available Settings		Explanation
Difficulty Level	Scale of 1 to 8 (where 1 = Easy and 8 = Hard) 5 ✔		Sets the game difficulty.
Music in Attract (Mode)	Yes ✔	No	Lets you turn the sound on or off in the attract mode.
Cabinet Configuration	Two-Player ✔	Three-Player	Sets the number of players who can use the game.
Auto Clear High Scores	Yes ✔	No	Automatically clears the high score table periodically.
Clear High Scores Now	Yes	No ✔	Immediately clears the high score table in the self-test.
Display EPA Screen	Yes ✔	No	Periodically displays the U.S. Environmental Protection Agency (EPA) emblem and the message "Recycle, Don't Trash It!" in the attract mode. If this game is used outside of the U.S., we recommend you set this option to "No."

✔ *Manufacturer's recommended settings*

Table 2-5 Game Option Settings

Game Options

Check and select the game options on this screen, shown in Figure 2-6. The screen shows the factory default settings in green.

To move through the options, to change or save the settings, or to return to the select test menu, follow the instructions shown at the bottom of the screen. The game options, with defaults, are shown and explained in Table 2-5.

Game Statistics

Use the information shown in the four statistics and histogram (bar graph) screens to keep track of your game use and maximize your profits. Record the information on the Guardians of the 'Hood statistics page in the back of this manual. The first of the screens is shown in Figure 2-7.

The game statistics are collected from the last time the statistics were cleared. You can clear the statistics by pressing the Punch button. Press any Defend button to advance to the next statistics or histogram screen, or to go back to the select test menu.

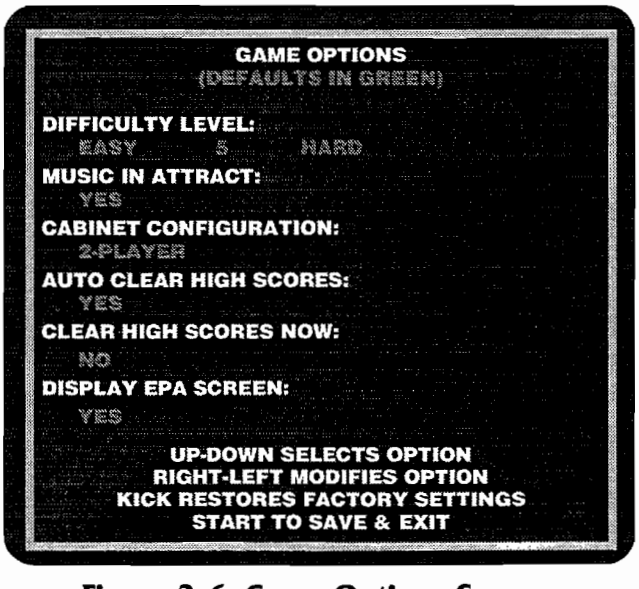


Figure 2-6 Game Options Screen

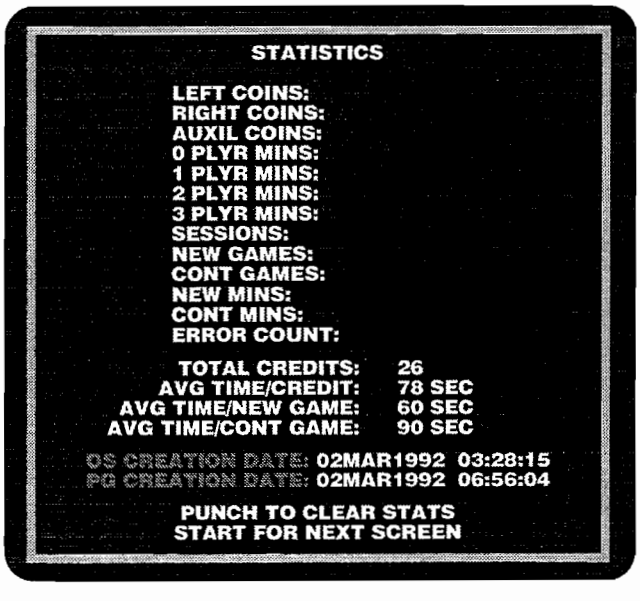
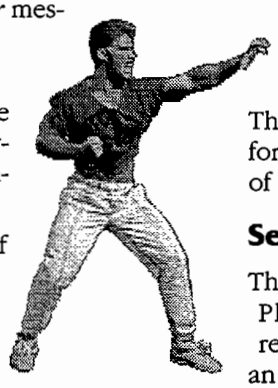


Figure 2-7 Statistics Screen

First Statistics Screen

The first statistics screen lists the following information:

- Left Coins shows the number of coins counted in the left coin mechanism.
- Right Coins shows the number of coins counted in the right coin mechanism.
- Auxiliary Coins shows the number of coins counted on the auxiliary service coin inputs.
- 0 Plyr Mins shows the number of minutes that the game was idle.
- 1 Plyr Mins shows the number of minutes that the game was played by one person only.
- 2 Plyr Mins shows the number of minutes that the game was played by two people.
- Session is measured from when the first player starts a game until the *Game Over* message appears.
- New Games shows the number of unique games played. A unique game is counted every time a player starts a new game (not a continued game).
- Cont Games shows the number of games that players continued.
- New Mins shows the number of minutes that the game was played as new games.



- Cont Mins shows the number of minutes that the game was played as continued games.
- Error Count shows the number of errors counted in the erasable memory. If you have an error count, the statistics may be wrong. If you consistently have errors counted for several weeks, replace the EEROM at 30E on the Guardians of the 'Hood game PCB.
- Total Credits is the number of credits accumulated by the game.
- Average Time per Credit is displayed in seconds. This item is tabulated for all games played since the statistics were cleared. If there are no credits, this line will not be displayed.
- Average Time per New Game is also displayed in seconds.
- Average Time per Continued Game is also displayed in seconds.

Statistics 2 Screen

The next statistics screen (titled "Round Counts and Average Times") lists the locale of each round. After the 13 locales, the screen shows how many players achieved those rounds and their average times playing those rounds.

New Game Time Screen

The next statistics screen (titled "New Game Time in Seconds") lists the length of time for all new games, grouped in 20-second increments (except for the shortest games lasting 0–39 seconds).

Continuation Game Time Screen

The next statistics screen (titled "Continuation Game Time in Seconds") lists the same information as the previous screen, except for continued games.

Session Time Screen

The next statistics screen (titled "Session Time in Minutes") lists how long each session lasted.

The bottom of the screen displays the median point for all session times. The median point represents half of all players above this point and half below.

Segment Screen

The next statistics screen (titled "Segment at Which Player Quit") lists which game segments players reached. The bottom of the screen displays the median point for all attained game segments.

Wave 1–4 Screens

The remaining four statistics screens (titled "Who's the most popular — Wave 1–4") lists which characters were most often chosen by players at the start of each wave.

Alphanumeric Test

The alphanumeric test, shown in Figure 2-8, checks the condition of the alphanumerics in the game. If you see an error on the screen, check the EPROM at 15L. Moving any of the joysticks up or down scrolls the screen up and down. Press any Defend button to go to the select test menu.

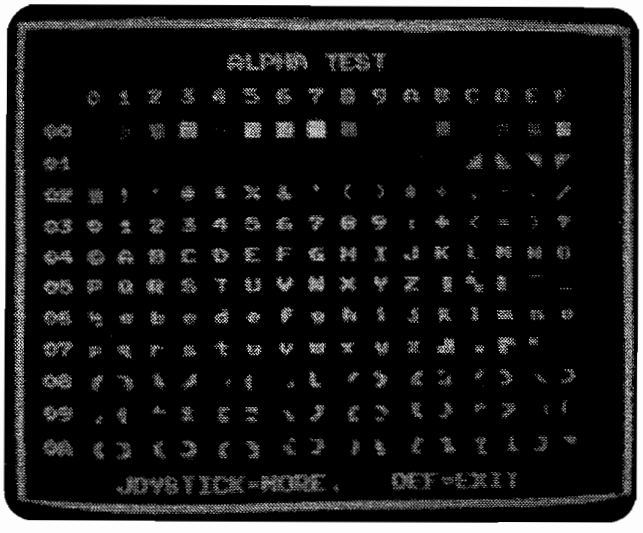


Figure 2-8 Alphanumeric Test Screen

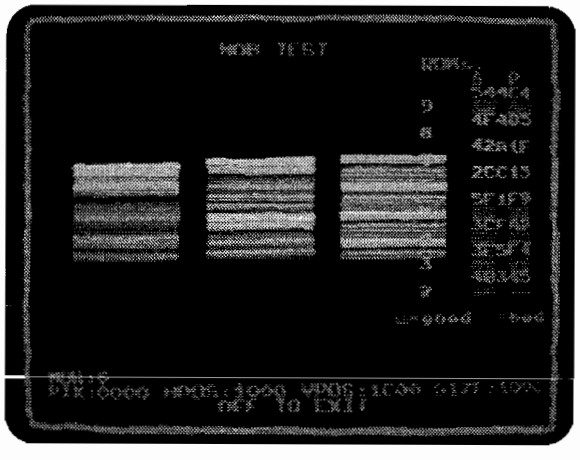


Figure 2-9 Motion Object Test Screen

Motion Object Test

The motion object test screen, shown in Figure 2-9, tests the movement and color of various game objects. The most important part of this screen is the ROM status squares on the right side. The squares should all be green (indicating good motion object ROMs); red squares indicate bad ROMs. The squares are displayed the same way as the ROMs are installed on the game PCB — columns S and P and rows 9 to 2.

Choose an object and move it or change it as follows:

Control:	***This action results:***
Left joystick	Left/right and up/down moves the object around on the screen.
Right joystick	Up/down enlarges/shrinks the object.

Figure 2-10 Playfield Test Screen

Left Punch, Kick	Selects one of the three motion objects (called 0, 1, and 2).
Right Punch, Kick	Selects a picture that will be displayed and manipulated as the motion object.

Press any Defend button to go to the select test menu.

Playfield Test

The playfield test screen, shown in Figure 2-10, tests the movement of the playfield.

Move the left joystick up, down, left, and right to check whether the whole picture moves accordingly. Press any Defend button to go to the select test menu.

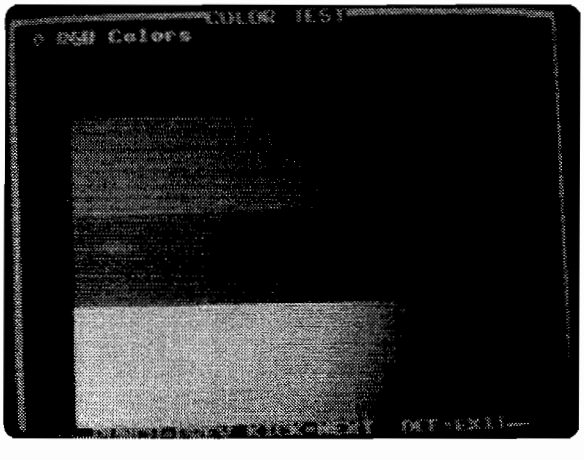


Figure 2-11 Color Test Screen

Color Test

This test has seven screens, the first of which is shown in Figure 2-11. Advance to each screen by pressing the Kick button.

- The first color test (labeled "0–RGB") indicates the dynamic range of the video display color circuit. The screen should show four bands (red, green, blue, and white, from top to bottom), ranging from bright to dark, left to right. The red, green, and blue bands are produced by only one color gun being turned on in each band. At the bottom is a white band, in which all three color guns are turned on.
- The second color test (labeled "1–YCP") shows the same as the first color test, but with two color guns being turned on in three bands — a yellow band (red and green guns), cyan band (blue and green guns), and purple band (blue and red guns). At the bottom is a white band.
- The remaining screen numbers 2 through 6 are color purity tests. The rectangles of color shown are red, green, blue, white ("GREY Purity 1"), and grey ("GREY Purity 2").

  Each screen should display a straight rectangle of color, with no curving at the corners, no unevenness of color, and no lines in the display.

If any of these screens are not correct, adjust the video display as described in the video display manual. Return to the select test menu by pressing any Jab button.

Convergence Test

The convergence test has four screens — white, violet, blue, and yellow grid lines. The white screen is shown in Figure 2-12. To see the remaining screens, press any Kick or Jump button. Press any Jab button to go to the select test menu.

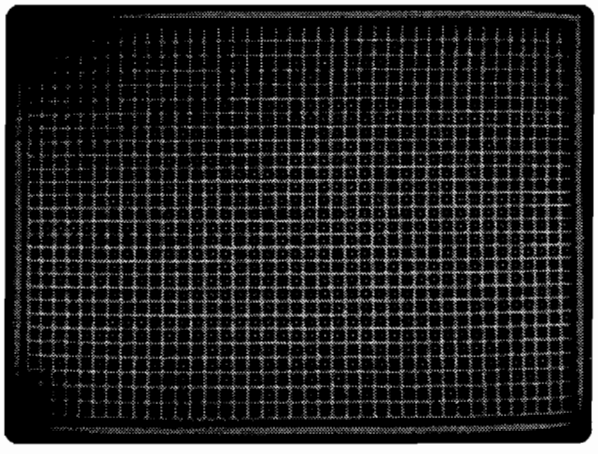
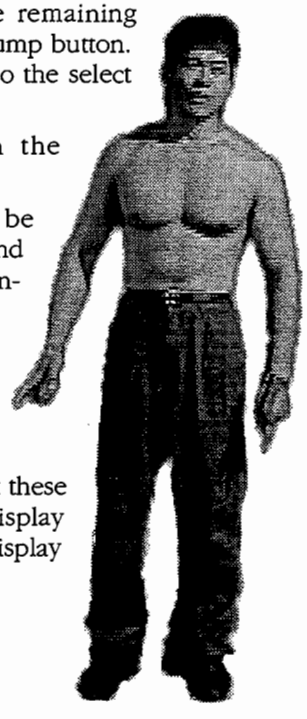


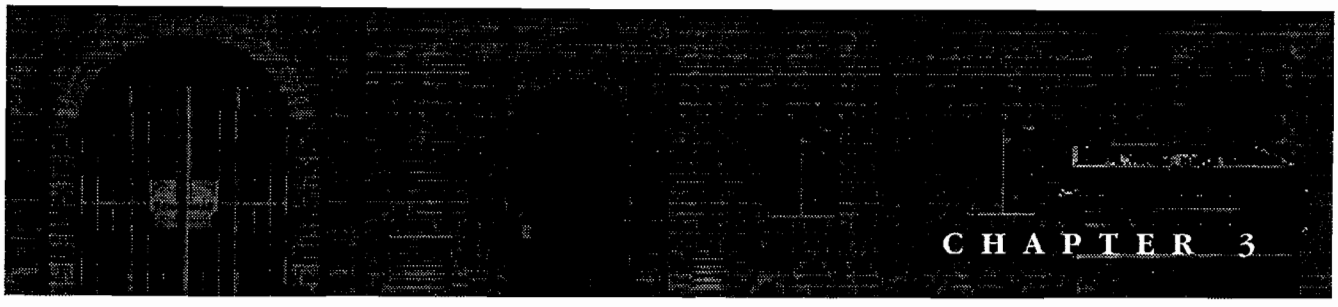
Figure 2-12 Convergence Test Screen

Check the following on the screens:

- The grid lines should be straight within 3.0 mm and the lines should not pincushion or barrel.
- The convergence of the lines on the violet and black screens should be within 2.0 mm.

If these screens do not meet these criteria, adjust the video display as described in the video display manual.

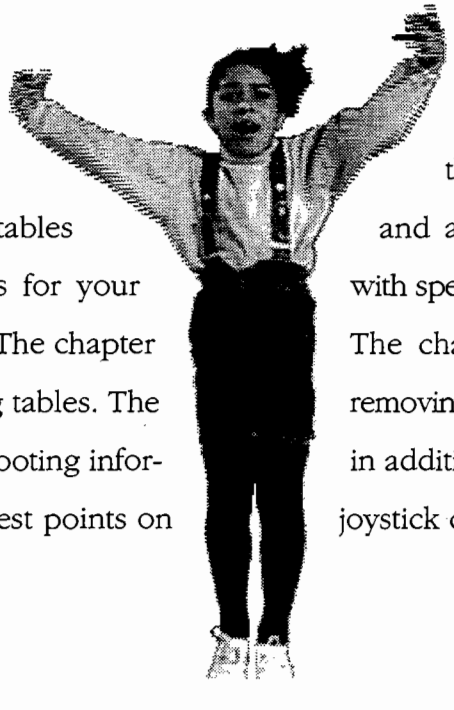




CHAPTER 3

Troubleshooting and Maintenance

Introduction



THIS CHAPTER contains troubleshooting tables and repair procedures for your Guardians of the 'Hood™ game. The chapter includes several troubleshooting tables. The tables contain general troubleshooting information, the voltage levels and test points on the game printed-circuit board, and a list of ROM-caused problems with specific ROMs to check and replace. The chapter also has instructions for removing and replacing the video display, in addition to repair information for the joystick control.

Problem	Suggested Action
Coin Mechanism Problem	1. Check the wiring to the coin mechanism. 2. Check the voltage to the + side of the mechanism. 3. Test the coin mechanisms with the sound test screen in the self-test.
Game Play Problem	1. Check the harness and connectors. 2. Perform the self-test. 3. Check the voltage levels on the PCB. See Table 3-2, *Voltage Inputs and Test Points.* 4. Check *What ROM Problems Look Like,* Table 3-3, for specific ROM problems.
Control Problem	1. Check the harnesses and connectors. 2. Check the switches on the control. 3. If you took the control apart, have you reassembled it correctly? 4. Make sure all the parts on the control are in good repair. Repair or replace parts. 5. Is the "Cabinet Configuration" option in the self-test game options set correctly? NOTE: The joysticks and pushbutton switches do *not* require lubrication.
Sound Problem	1. Is the speaker volume turned up? (Volume is adjusted digitally in the self-test.) 2. Check the voltage on the PCB edge connector. 3. Check the wiring from the PCB to the speaker. 4. Check the voltage level to the PCB. See Table 3-2, *Voltage Inputs and Test Points.* 5. Replace the speaker.
Video Display Problem	
Screen is dark.	1. Is the game plugged in? 2. Is the game turned on? 3. Are the connections good? 4. Is the line fuse good? 5. Is the display brightness turned up? 6. Are the solder connections on the line filter and transformer good? 7. Is the edge connector on the PCB tightly connected? 8. Check all of the items below. If you answer *no* to any question, you have a problem with the video display, not with the game circuitry. See your video display service manual. a. Do you have power to the video display? b. Are the video display's filaments lit? c. Do you have high voltage to the video display? 9. Are the voltage levels to the video display PCB correct? (Power voltage is 110 VAC. Video signal voltage is 0.5 to 3.5 Volts.) 10. If the level is not correct, check the connectors and the harness.
Only a colored screen appears.	You probably have a serious RAM problem.
Display area wavers or is too small.	1. Do you have correct power voltage to the video display PCB? 2. Do you have correct high voltage to the video display?
Picture is wavy.	1. Is the monitor ground connected to the monitor? 2. Are the sync inputs connected properly?
Picture is upside down.	When you serviced the display, you connected the wires incorrectly. Switch the horizontal or vertical yoke wires on the display.
Convergence, purity or color problems.	Use the screens in the self-test (see Chapter 2) to adjust the video display. Use the adjustment procedures in your video display manual.
Picture is not centered.	Use the centering procedures in your video display manual.

Table 3-1 Troubleshooting Table

Voltage	Test Point or LED	Source and Purpose
+5 ± 0.25 VDC	+5V1	Logic power from the switching power supply.
	CR3 LED (Game PCB)	Lights when 5 V is applied to the PCB and the reset (RST) jumper is open.
	CR9 LED (JSA Audio III PCB)	Lights when the +12 V supply is good.
	CR3 LED (JSA Audio III PCB)	Lights when the –5 V supply is good.
+12V	+V0P (pin 4 of LM324)	+12 V from the switching power supply. Positive supply for the analog circuitry.
–5V	–V0P (pin 11 of LM324)	–5V from the switching power supply (if connected). Negative supply for the analog circuitry.

Table 3-2 Voltage Inputs and Test Points on the PCBs

Maintaining the Coin Mechanism

The coin mechanism should be cleaned every three months. For detailed parts information on the coin door, see Figure 4-3. To maintain the coin mechanism:

1. Turn power off to the game. Open the upper coin door.
2. Open the gate on the door covering the magnet. Use the blade of a screwdriver to scrape away any metal filings collected on the magnet.
3. For a thorough cleaning, wash the coin mechanism in hot soapy water. Use a toothbrush to remove any stubborn build-up of residue in the coin path.
4. Dry the coin mechanism with compressed air.
5. If you do not want to use water, brush the loose dust off with a soft brush and scrub the residue in the coin path with a toothbrush. Blow out all the loose dust and dirt with compressed air.

NOTE

Never lubricate the coin mechanism with oil or grease.

Repairing the Video Display

The video display frame in this cabinet is designed to be used with both horizontal- and vertical-mounting displays, as well as 19- and 25-inch displays.

Removing the Video Display

If you have a problem with the video display, first run the self-test procedure to narrow down the cause. To make adjustments to the video display, unlock the service door on the rear of the cabinet.

If you want to repair the video display, remove it from the game by following this procedure:

1. Turn the game power off and wait two minutes. Unplug the power cord for safety.
2. While you wait, unlock the upper rear service door on the cabinet.
3. Remove the three screws that attach the attraction shield retainer, and remove the retainer, shield, and attraction film. Then remove the display shield, cardboard bezels, and cleats in front of the display.

Problem	ROM Causing the Problem	Check the ROM at:
Program works, but the motion objects objects are missing or bad	Graphics	Playfield: 20D-21D. Motion Object High: 2S-7S. Motion Object Low: 2P-7P. Alphanumerics: 22J.
Garbage on screen; program doesn't work	Processor Program ROM 0	14C 8D, 8C
Game program is erratic.	Program ROM 1	9D, 9C
No sound or erratic sound	Audio ROM: Audio Program Audio ADPCM	 12C 19E

Table 3-3 What ROM Problems Look Like

WARNING

High Voltage

The video display contains lethal high voltages. To avoid injury, do not service this display until you observe all precautions necessary for working on high-voltage equipment.

X-Radiation

This video display is designed to minimize X-radiation. However, to avoid possible exposure to soft X-radiation, never modify the high-voltage circuitry.

Implosion Hazard

The cathode-ray tube (CRT) may implode if struck or dropped. The shattered glass from the tube may cause injury up to six feet away. Use care when handling the display and when removing it from the game cabinet. Also, wear gloves to protect your hands from the sheet-metal edges.

4. Remove the four nuts and washers that secure the video display.
5. Discharge the high voltage from the cathode-ray tube (CRT). The display assembly contains a circuit for discharging the high voltage to ground when power is removed. However, to make certain, always discharge the display as follows:
   a. Attach one end of a solid 18-gauge wire to a well-insulated screwdriver or wooden handle.
   b. Attach the other end of the wire to an earth ground.
   c. Quickly touch the blade end of the screwdriver to the CRT anode by sliding it under the anode cap.
   d. Wait two minutes and repeat part c.
6. Disconnect the harness connectors from the video display.
7. Pull the video display assembly out of the cabinet. Be extremely careful.

Replacing the Video Display

Perform the following procedure to replace the video display in the cabinet.

1. Carefully lift the video display into the cabinet.
2. Install the nuts that hold the video display assembly.
3. Connect the power and signal harnesses to the video display.
   If you replace the CRT and yoke together, adjust the brightness, size, and centering as described in the video display service manual. Check the purity and convergence according to that manual, but adjust both only if required.
4. Install the cardboard bezel, video display shield, and cleats. Replace the attraction film, attraction shield, and retainer.
5. Lock the rear service door on the cabinet.

Screen Color	RAM Error Location
Red	Working RAM
Green	Playfield RAM
Blue	Motion Object RAM

Table 3-4 Screen Colors Indicating Bad RAMs

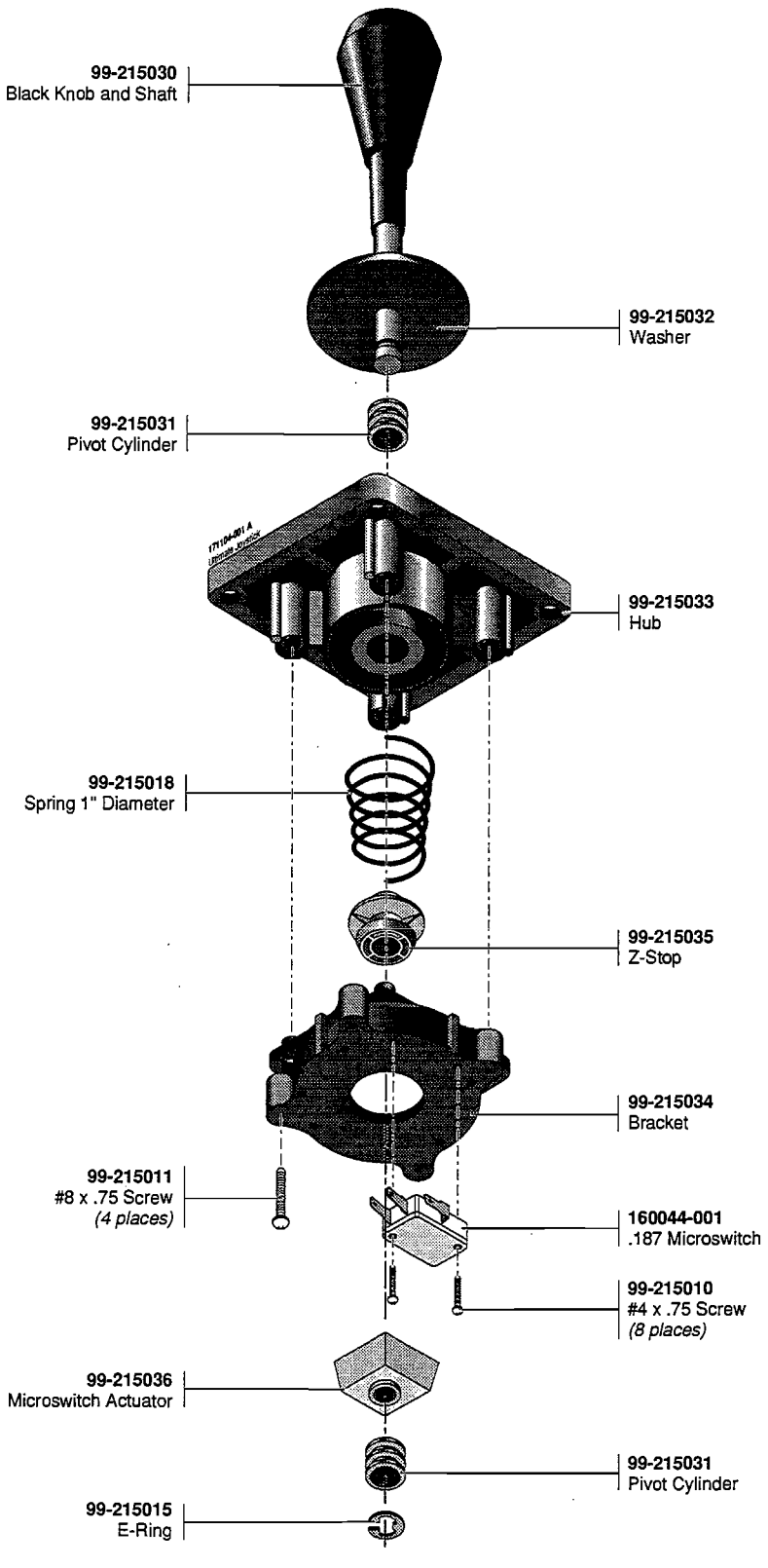


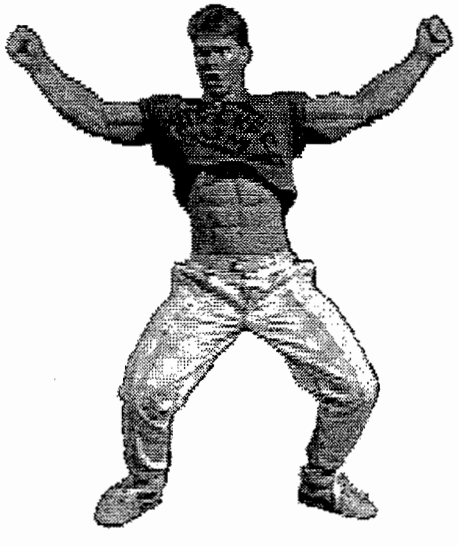
Figure 3-1 Maintaining the Joystick Control

Removing and Replacing the Joystick Control

The joystick control is shown in Figure 3-1. If you want to repair this control, remove it from the control panel. To repair the joystick, disassemble it by removing the retaining ring at the bottom of the shaft. To replace any of the four switches, remove the two screws that secure each switch.

ROMs and RAMs

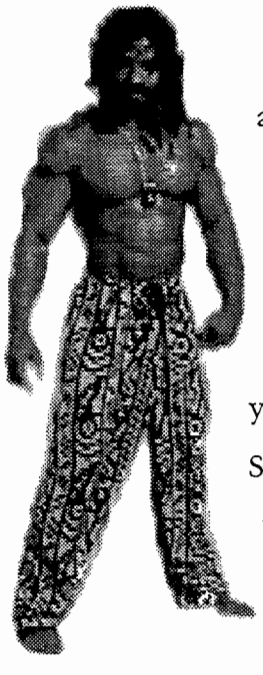
If you have think you have bad ROMs or RAMs, run the self-test. If you see only a colored screen and cannot enter the self-test, see Table 3-3. Also refer to Table 3-4 if you think you have a RAM problem.



Parts Illustrations

Part Ordering Information

THIS CHAPTER provides information you need to order parts for your game. The PCB parts lists are arranged in alphabetical order by component. Within each section the parts are arranged numerically by part number. ¶ When you order parts, give the part number, part name, the number of this manual, and the serial number of your game. With this information, we can fill your order rapidly and correctly. We hope this will create less downtime and more profit from your games. Atari Games Customer Service phone numbers are listed on the inside front cover of this manual.



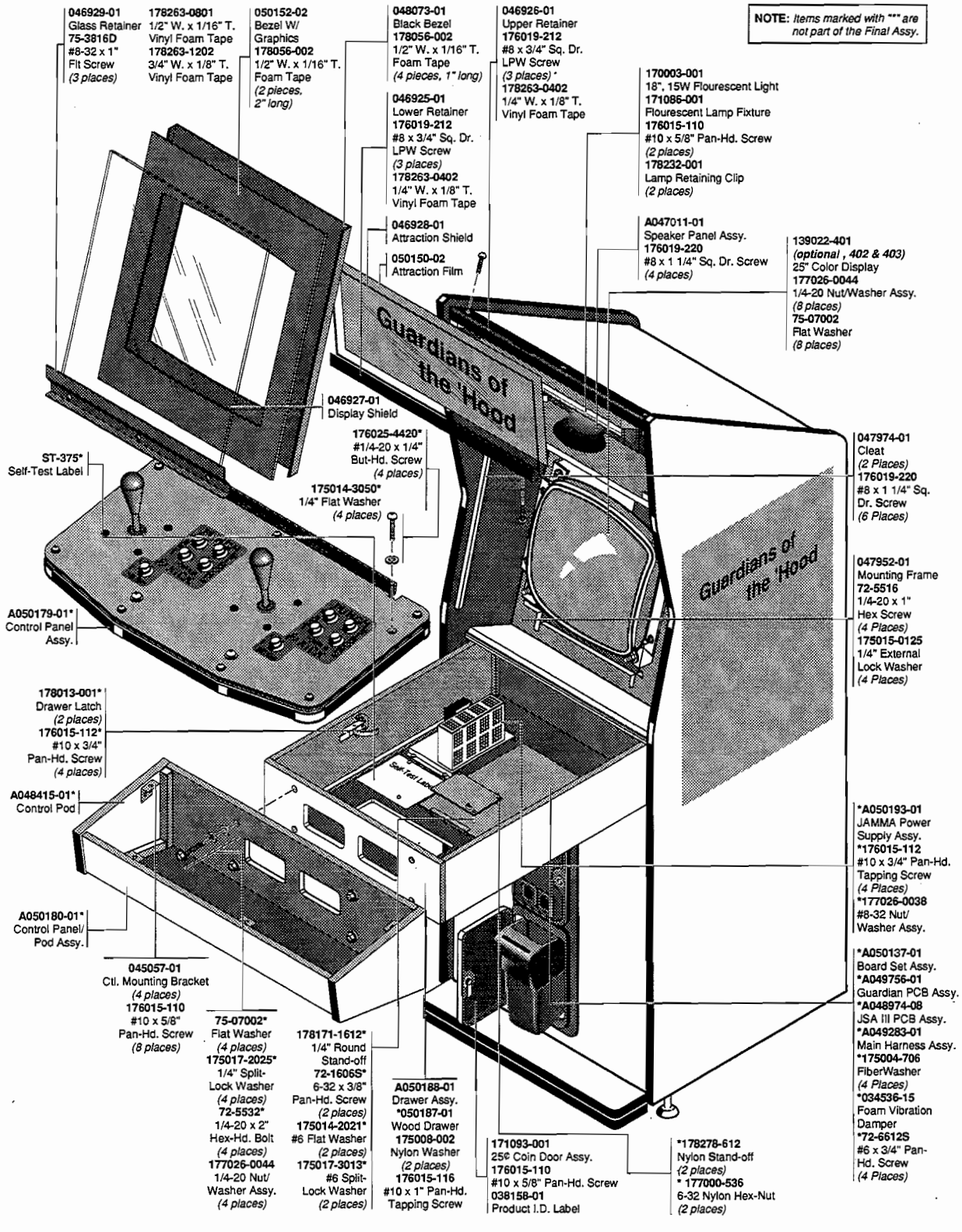


Figure 4-1 Cabinet-Mounted Assemblies, Front View

A050190-01 D

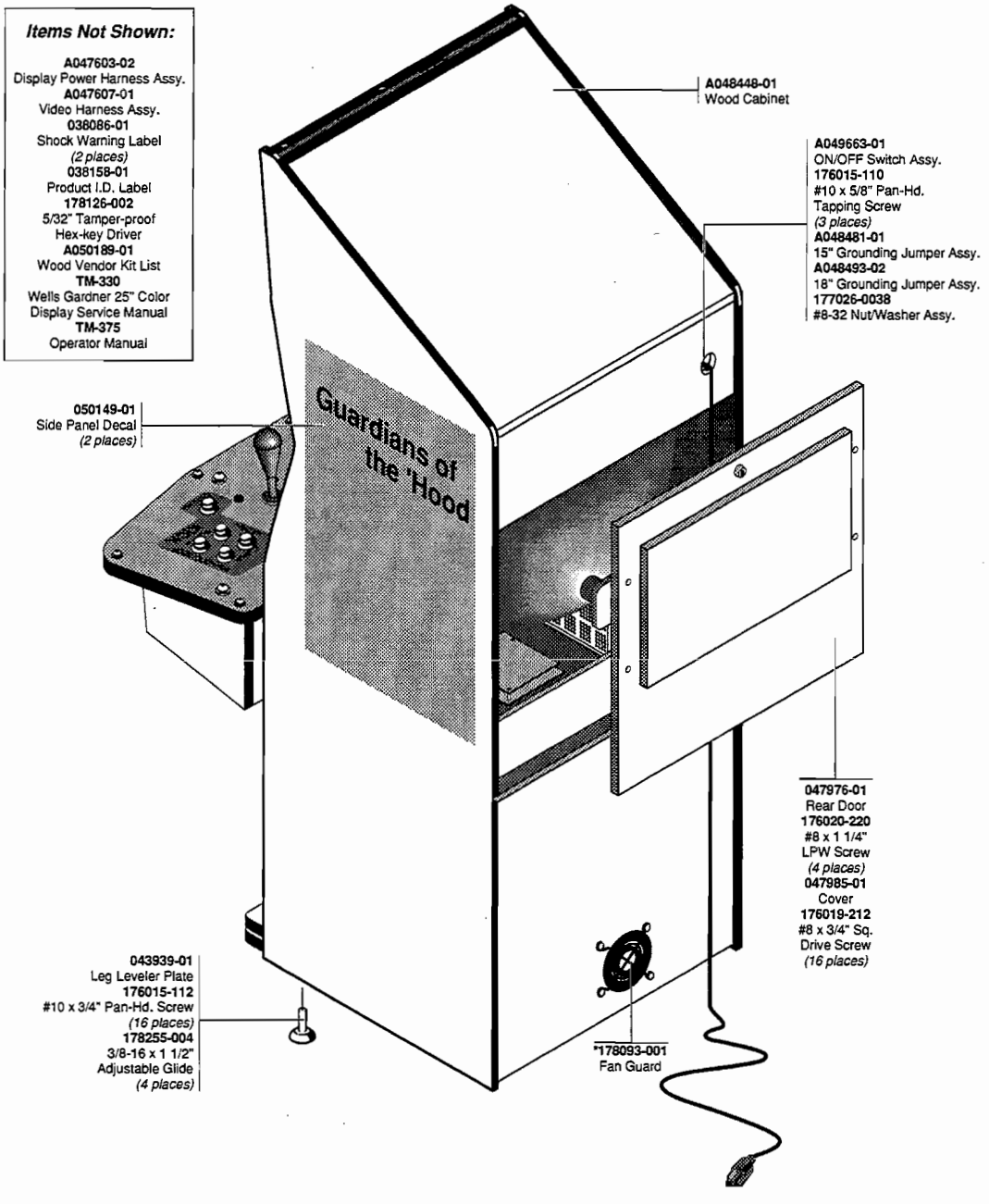


Figure 4-1 Cabinet-Mounted Assemblies, Front View

A050190-01 D

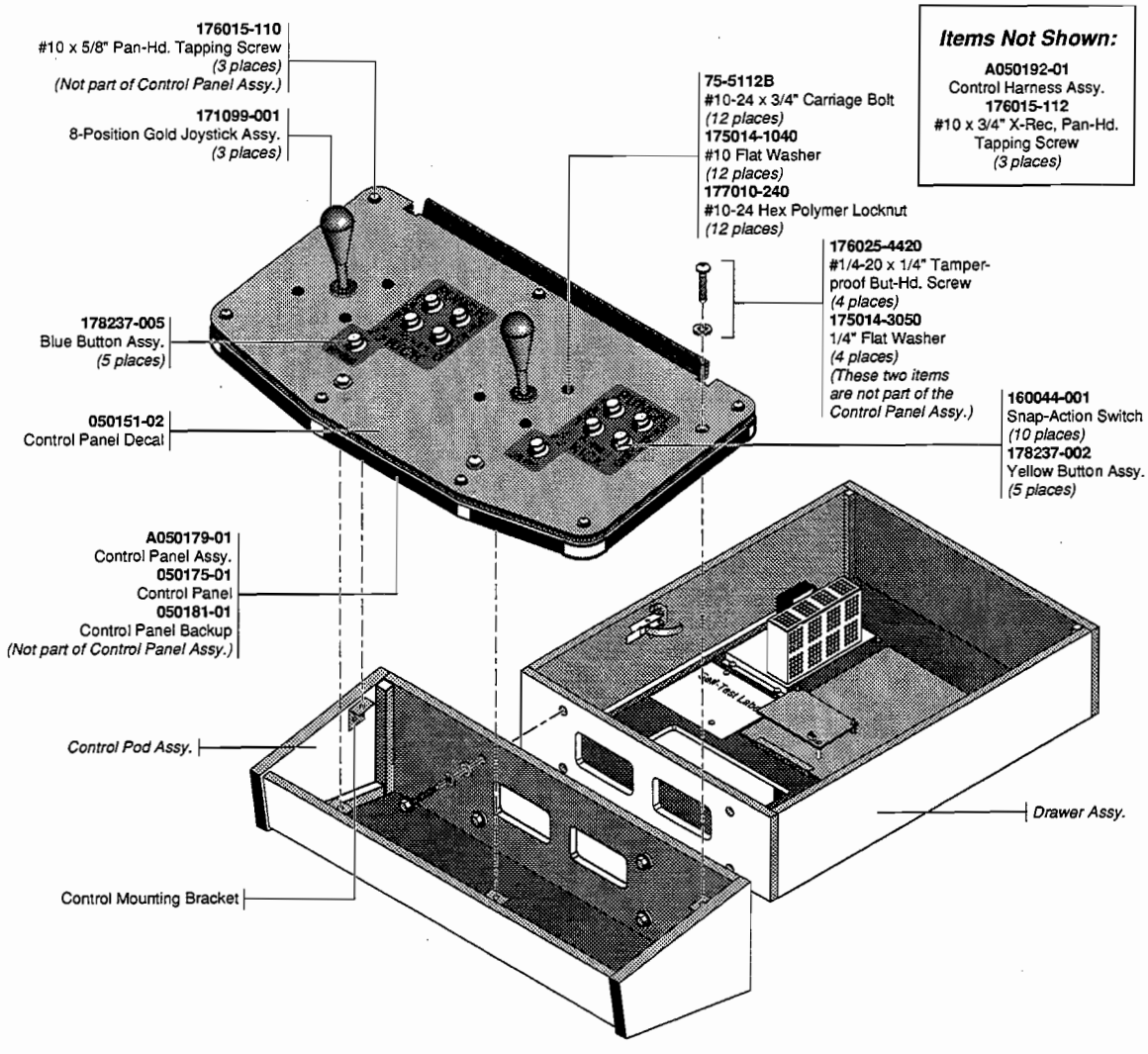


Figure 4-2 Control Panel Assembly

A050179-01 B

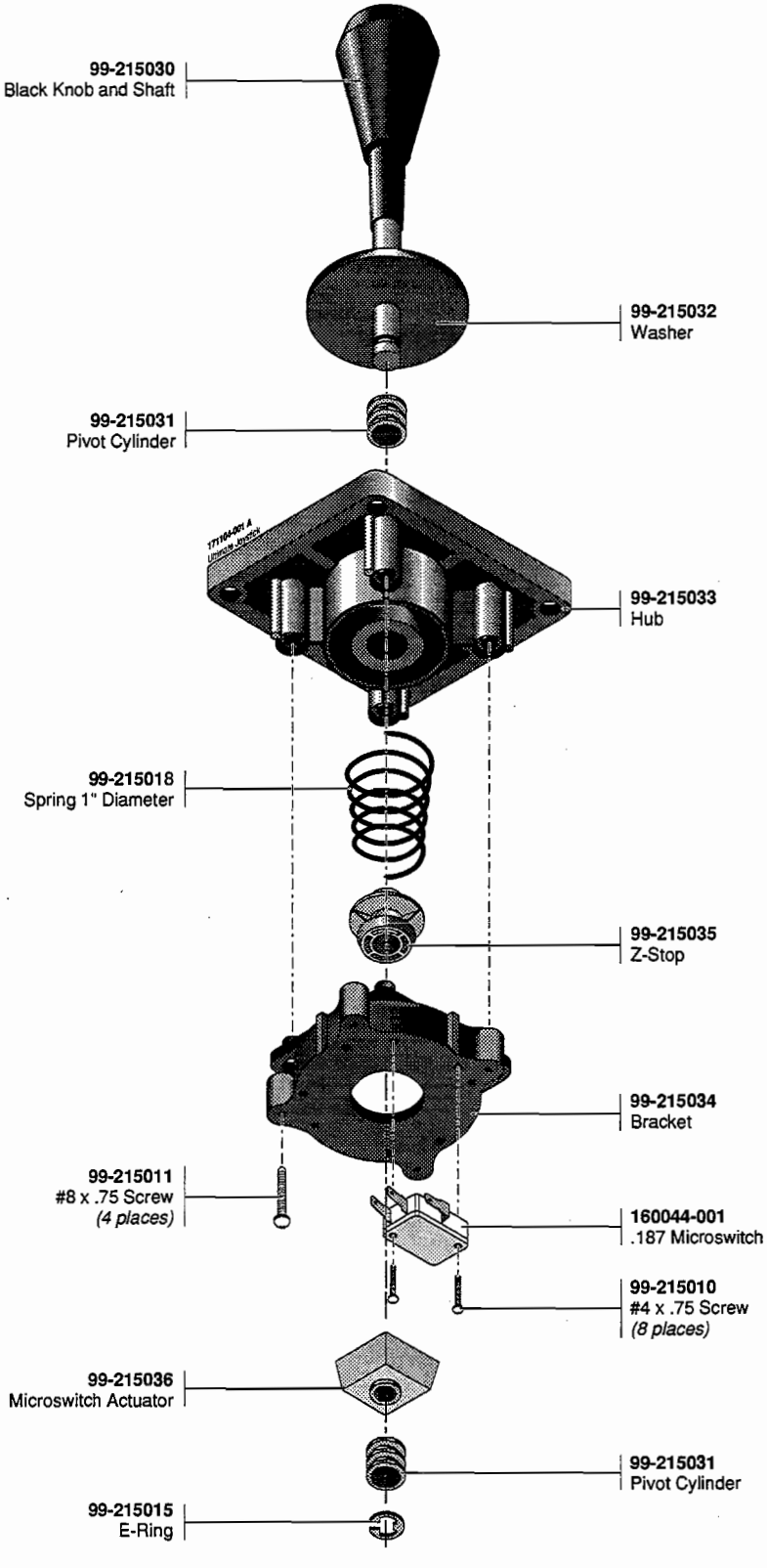


Figure 4-3 Joystick Assembly

171099-001

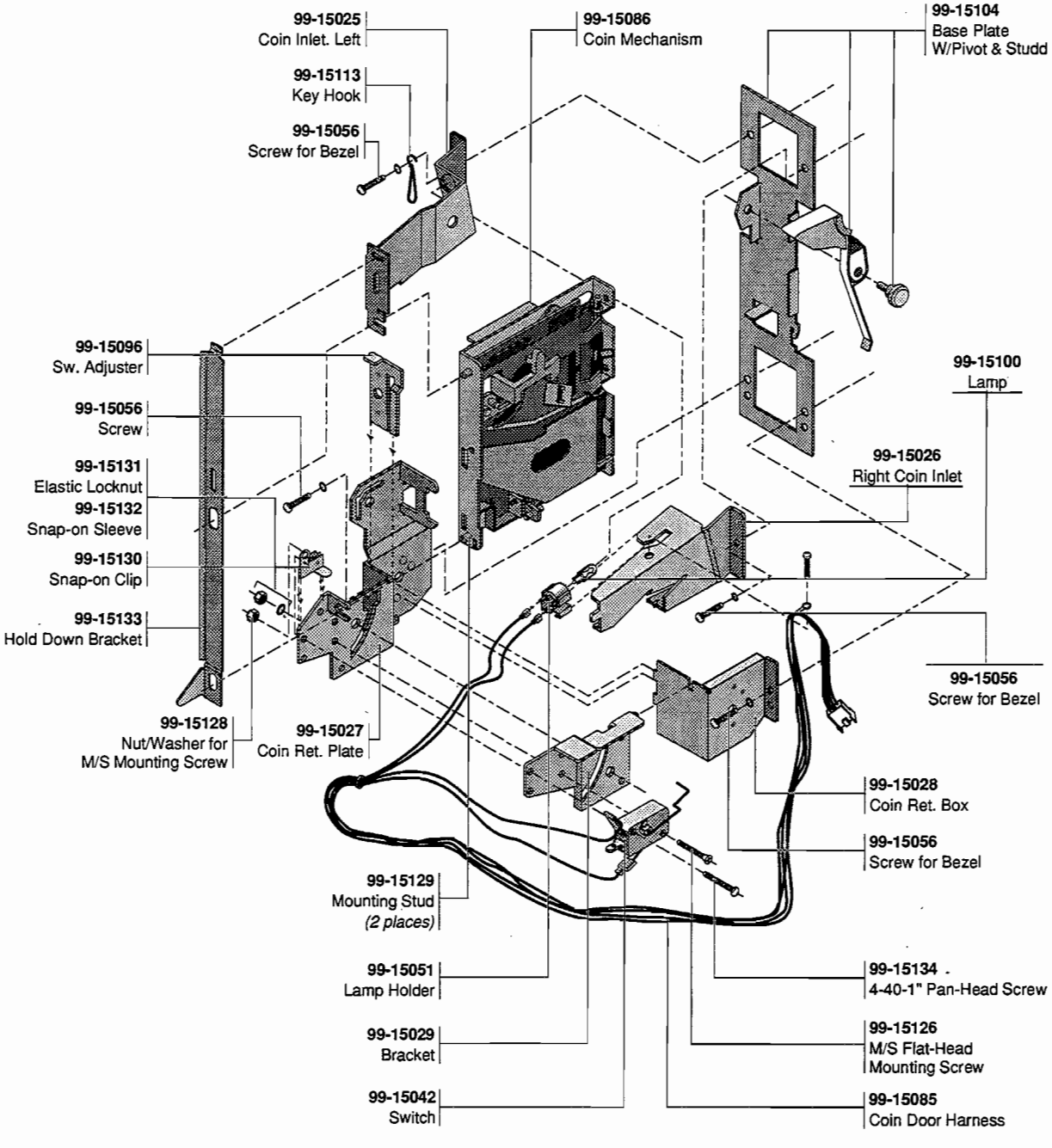


Figure 4-4 Coin Controls, Inc. Coin Door Assembly

171093-001

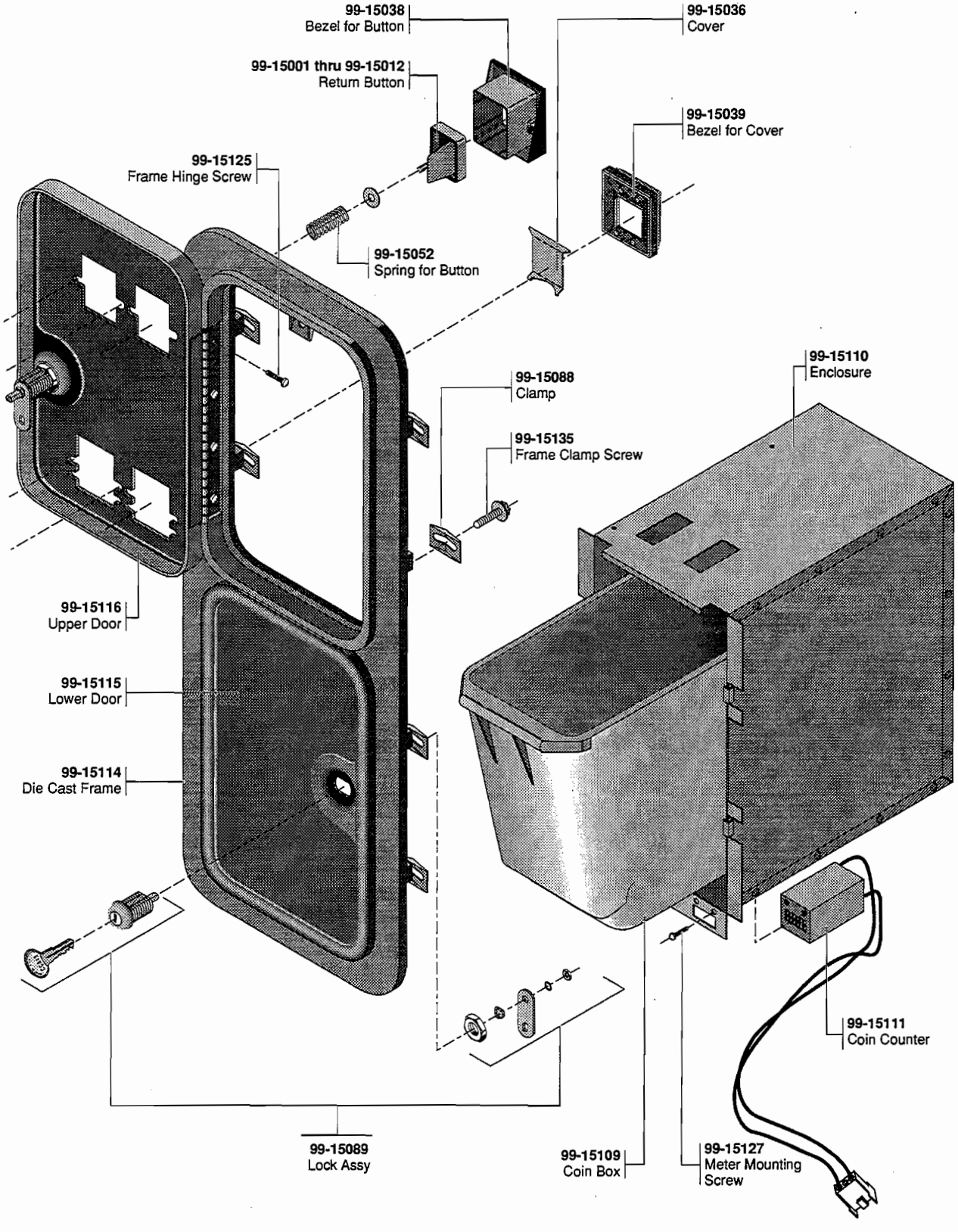
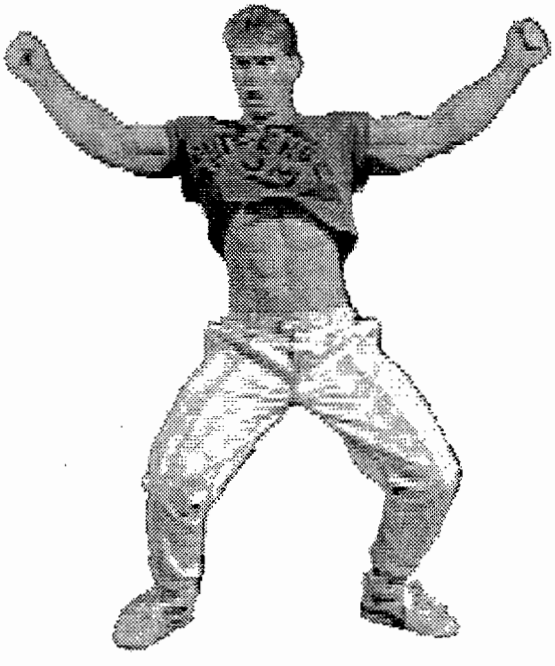


Figure 4-4 Coin Controls, Inc. Coin Door Assembly, Continued

171093-001

NOTES



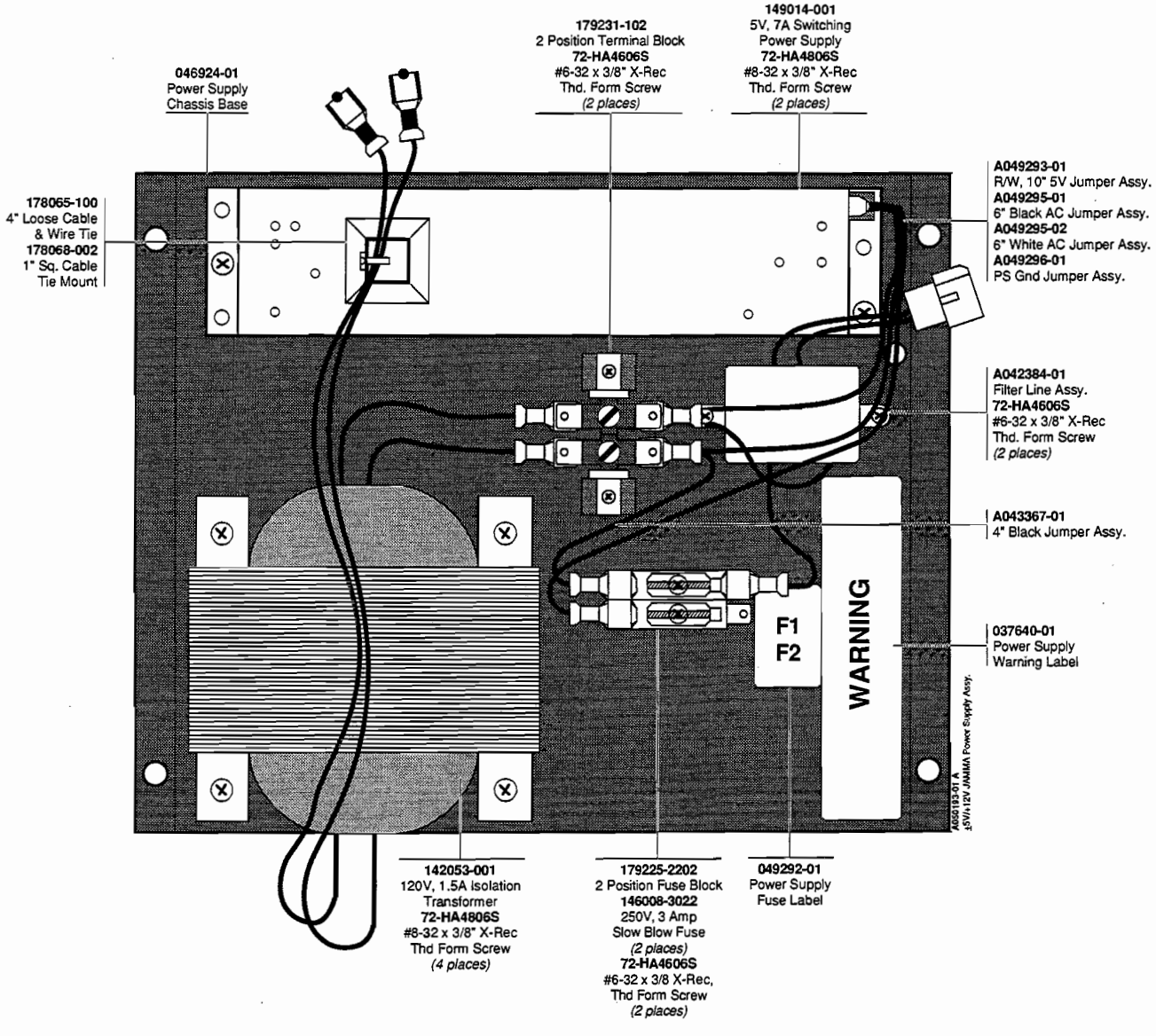


Figure 4-5 Power Supply Assembly

A050193-01 A

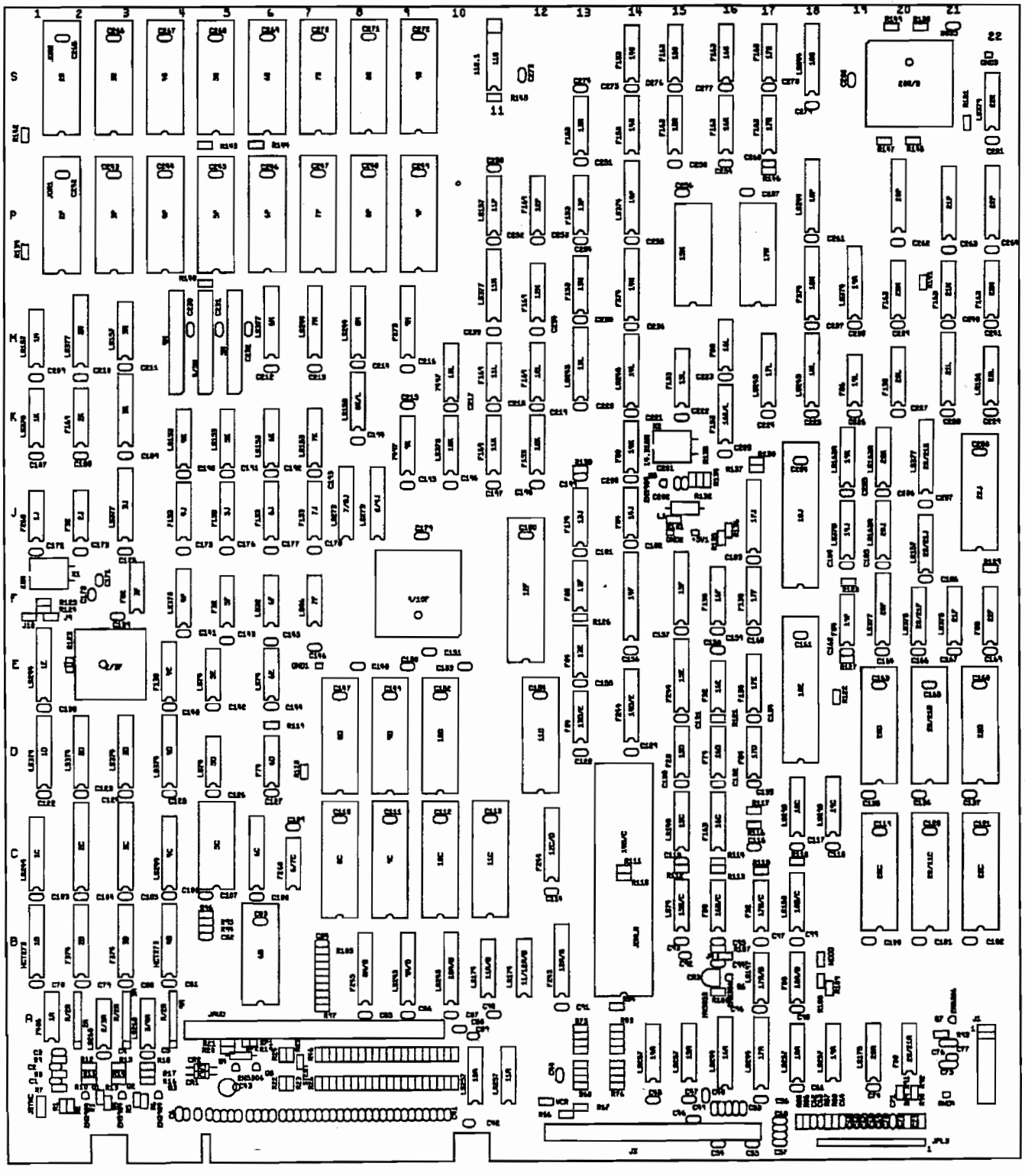


Figure 4-6 Guardians of the 'Hood Game PCB Assembly

A049757-07 A

Guardians of the 'Hood Game PCB Assembly Parts List

Designator	Description	Part No.
	Sockets	
2/3F	Socket, 44 Pin, Plcc	179237-044
2C	Socket, 24 Pin, .300	179259-024
2P, 2S	Socket, 32 Pin, .600	179257-032
3C	Socket, 24 Pin, .300	179259-024
3K	Socket, 20 Pin, .300	179259-020
3P, 3S	Socket, 32 Pin, .600	179257-032
4/5M, 4M	Socket, Zip 28	179302-028
4P, 4S	Socket, 32 Pin, .600	179257-032
5C	Socket, 24 Pin, .600	179257-024
5M	Socket, Zip 28	179302-028
5P, 5S	Socket, 32 Pin, .600	179257-032
6C	Socket, 20 Pin, .300	179259-020
6P, 6S, 7P, 7S, 8C, 8D, 8P, 8S	Socket, 32 Pin, .600	179257-032
9/10F	Socket, 68 Pin, PLCC	179237-068
9C, 9D, 9P, 9S, 10C, 10D, 11C, 11D	Socket, 32 Pin, .600	179257-032
11S	Socket, 20 Pin, .300	179259-020
12F	Socket, 40 Pin, .600	179257-040
14B/C	Socket, 64 Pin, .900	179256-064
14F	Socket, 24 Pin, .300	179259-024
15F	Socket, 20 Pin, .300	179259-020
15N	Socket, 28 Pin, .600	179257-028
17J	Socket, 20 Pin, .300	179259-020
17N	Socket, 28 Pin, .600	179257-028
18E, 18J	Socket, 40 Pin, .600	179257-040
20/21C, 20/21D, 20C, 20D	Socket, 32 Pin, .600	179257-032
20P	Socket, 20 Pin, .300	179259-020
20R/S	Socket, 68 Pin, PLCC	179237-068
21L, 21P	Socket, 20 Pin, .300	179259-020
22C,22D,22J	Socket, 32 Pin, .600	179257-032
22P	Socket, 20 Pin, .300	179259-020
	Integrated Circuits	
1A	Integrated Circuit, 7406	137052-001
1B	Integrated Circuit, 74HCT273	137655-001
1C	Integrated Circuit, 74LS244	137038-001
1D	Integrated Circuit, 74LS374	137144-001
1E	Integrated Circuit, 74LS244	137038-001
1J	Integrated Circuit, 74F260	137570-001
1K	Integrated Circuit, 74LS378	137305-001
1M	Integrated Circuit, 74LS157	137029-001
2/3A	Integrated Circuit, 74LS260	137332-001
2/3F	ASIC 65	136092-0012
2A	Res, R/2R, 1K/2K	118016-001
2B	Integrated Circuit, 74F374	137420-001
2C	Integrated Circuit, RAM, 2K x 8, 35 ns, .3	137534-001
2D	Integrated Circuit, 74LS374	137144-001
2J	Integrated Circuit, 74F32	137486-001
2K	Integrated Circuit, 74F169	137496-001
2M	Integrated Circuit, 74LS377	137145-001
2P	EPROM, 150 ns, 512K x 8	136092-0040
2S	EPROM, 150 ns, 512K x 8	136092-0041
3/4A	Integrated Circuit, 74LS260	137332-001
3A	Res, R/2R, 1K/2K	118016-001
3B	Integrated Circuit, 74F374	137420-001
3C	Integrated Circuit, RAM, 2K x 8, 35 ns, .3	137534-001
3D	Integrated Circuit, 74LS374	137144-001
3F	Integrated Circuit, 74F02	137481-001
3J	Integrated Circuit, 74LS377	137145-001
3K	GAL16V8, 25 ns	136092-0005
3M	Integrated Circuit, 74LS157	137029-001
3P	EPROM, 150 ns, 512K x 8	136092-0042
3S	EPROM, 150 ns, 512K x 8	136092-0043
4/5M	Integrated Circuit, VRAM, 256K x 4, 100 ns	137682-100
4A	Res, R/2R, 1K/2K	118016-001
4B	Integrated Circuit, 74HCT273	137655-001
4C	Integrated Circuit, 74LS244	137038-001
4D	Integrated Circuit, 74LS374	137144-001
4E	Integrated Circuit, 74F138	137521-001
4F	Integrated Circuit, 74LS378	137305-001
4J	Integrated Circuit, 74F153	137492-001
4K	Integrated Circuit, 74LS153	137104-001
4M	Integrated Circuit, VRAM, 256K x 4, 100 ns	137682-100
4P	EPROM, 150 ns, 512K x 8	136092-0044
4S	EPROM, 150 ns, 512K x 8	136092-0045
5C	Integrated Circuit, 28C16-200, 200 ns	137648-200
5D, 5E	Integrated Circuit, 74LS74	137023-001
5F	Integrated Circuit, 74F32	137486-001
5J	Integrated Circuit, 74F153	137492-001
5K	Integrated Circuit, 74LS153	137104-001
5M	Integrated Circuit, VRAM, 256K x 4, 100 ns	137682-100

Guardians of the 'Hood Game PCB Assembly
Parts List, Continued

Designator	Description	Part No.
5P	EPROM, 150 ns, 512K x 8	136092-0046
5S	EPROM, 150 ns, 512K x 8	136092-0047
6/7C	Integrated Circuit, 74F260	137570-001
6C	GAL16V8, 25 ns	136092-0009
6D	Integrated Circuit, 74F74	137436-001
6E	Integrated Circuit, 74LS74	137023-001
6F	Integrated Circuit, 74LS32	137019-001
6J	Integrated Circuit, 74F153	137492-001
6K	Integrated Circuit, 74LS153	137104-001
6M	Integrated Circuit, 74LS377	137145-001
6P	EPROM, 150 ns, 512K x 8	136092-0048
6S	EPROM, 150 ns, 512K x 8	136092-0049
7/8J	Integrated Circuit, 74LS273	137040-001
7F	Integrated Circuit, 74LS86	137079-001
7J	Integrated Circuit, 74F153	137492-001
7K	Integrated Circuit, 74LS153	137104-001
7M	Integrated Circuit, 74LS244	137038-001
7P	EPROM, 150 ns, 512K x 8	136092-0050
7S	EPROM, 150 ns, 512K x 8	136092-0051
8/9J	Integrated Circuit, 74LS273	137040-001
8A/B	Integrated Circuit, 74F245	137591-001
8C	EPROM, 150 ns, 128K x 8	136092-0020
8D	EPROM, 150 ns, 128K x 8	136092-0021
8K/L	Integrated Circuit, 74LS153	137104-001
8M	Integrated Circuit, 74LS244	137038-001
9/10F	FPLA	136092-0004
9A/B	Integrated Circuit, 74LS245	137134-001
9C	EPROM, 200 ns, 128K x 8	136092-0022
9D	EPROM, 200 ns, 128K x 8	136092-0023
9K	Integrated Circuit, 7497	137090-001
9M	Integrated Circuit, 74F273	137610-001
10A	Integrated Circuit, 74LS257	137136-001
10A/B	Integrated Circuit, 74LS245	137134-001
10K	Integrated Circuit, 74LS378	137305-001
10L	Integrated Circuit, 7497	137090-001
11/12A/B	Integrated Circuit, 74LS174	137122-001
11A	Integrated Circuit, 74LS257	137136-001
11A/B	Integrated Circuit, 74LS174	137122-001
11K, 11L	Integrated Circuit, 74F169	137496-001
11N	Integrated Circuit, 74LS377	137145-001
11P	Integrated Circuit, 74LS157	137029-001
11S	GAL16V8, 25 ns	136092-0011
12A/B	Integrated Circuit, 74F245	137591-001
12C/D	Integrated Circuit, 74F244	137502-001
12F	Integrated Circuit, SOS	137550-001
12K	Integrated Circuit, 74F153	137492-001
12L,12N,12P	Integrated Circuit, 74F169	137496-001
13D/E,13E	Integrated Circuit, 74F04	137437-001
13F	Integrated Circuit, 74F02	137481-001
13J	Integrated Circuit, 74F174	137531-001
13L	Integrated Circuit, 74LS245	137134-001
13N,13P,13R	Integrated Circuit, 74F153	137492-001
14A	Integrated Circuit, 74LS257	137136-001
14B/C	Integrated Circuit, 68000, 16 MHz	137669-0001
14D/E	Integrated Circuit, 74F244	137502-001
14F	GAL6001, 35 ns	136092-0010
14J	Integrated Circuit, 74F04	137437-001
14K	Integrated Circuit, 74F00	137327-001
14L	Integrated Circuit, 74LS245	137134-001
14N	Integrated Circuit, 74F374	137420-001
14P	Integrated Circuit, 74LS374	137144-001
14R, 14S	Integrated Circuit, 74F153	137492-001
15A	Integrated Circuit, 74LS257	137136-001
15B/C	Integrated Circuit, 74LS74	137023-001
15C	Integrated Circuit, 74LS148	137417-001
15D	Integrated Circuit, 74F20	137530-001
15E	Integrated Circuit, 74F244	137502-001
15F	GAL16V8, 25 ns	136092-0007
15L	Integrated Circuit, 74F153	137492-001
15N	Integrated Circuit, RAM, 32K x 8, 70 ns, .6	137615-070
15R, 15S	Integrated Circuit, 74F163	137345-001
16B/C	Integrated Circuit, 74F08	137483-001
16C	Integrated Circuit, 74F163	137345-001
16D	Integrated Circuit, 74F74	137436-001
16E	Integrated Circuit, 74F32	137486-001
16F	Integrated Circuit, 74F138	137521-001
16K/L	Integrated Circuit, 74F153	137492-001
16L	Integrated Circuit, 74F00	137327-001
16R, 16S	Integrated Circuit, 74F163	137345-001
17A	Integrated Circuit, 74LS244	137038-001
17A/B	Integrated Circuit, 74LS197	137240-001
17B/C	Integrated Circuit, 74F32	137486-001
17D	Integrated Circuit, 74F04	137437-001
17E, 17F	Integrated Circuit, 74F138	137521-001
17J	GAL16V8, 25 ns	136092-0008
17L	Integrated Circuit, 74LS245	137134-001
17N	Integrated Circuit, RAM, 32K x 8, 70 ns, .6	137615-070

Guardians of the 'Hood Game PCB Assembly
Parts List, Continued

Designator	Description	Part No.
17R, 17S	Integrated Circuit, 74F163	137345-001
18A	Integrated Circuit, 74LS257	137136-001
18A/B	Integrated Circuit, 74F08	137483-001
18B/C	Integrated Circuit, 74LS153	137104-001
18E	Integrated Circuit, SOS	137550-001
18J	Integrated Circuit, PFHS	137419-104
18L	Integrated Circuit, 74LS245	137134-001
18N	Integrated Circuit, 74F374	137420-001
18P, 18S	Integrated Circuit, 74LS244	137038-001
19A	Integrated Circuit, 74LS257	137136-001
19C	Integrated Circuit, 74LS298	137201-001
19F	Integrated Circuit, 74F04	137437-001
19J	Integrated Circuit, 74LS378	137305-001
19K	Integrated Circuit, 74LS163 A	137114-001
19L	Integrated Circuit, 74F86	137649-001
19N	Integrated Circuit, 74LS374	137144-001
20/21A	Integrated Circuit, 74F00	137327-001
20/21C	EPROM, 200 ns, 128K x 8	136092-0034
20/21D	EPROM, 200 ns, 128K x 8	136092-0033
20/21F	Integrated Circuit, 74LS378	137305-001
20/21J	Integrated Circuit, 74LS157	137029-001
20/21K	Integrated Circuit, 74LS377	137145-001
20A	Integrated Circuit, 74LS175	137123-001
20C	EPROM, 200 ns, 128K x 8	136092-0036
20D	EPROM, 200 ns, 128K x 8	136092-0035
20F	Integrated Circuit, 74LS377	137145-001
20J, 20K	Integrated Circuit, 74LS163 A	137114-001
20L	Integrated Circuit, 74F138	137521-001
20N	Integrated Circuit, 74F163	137345-001
20P	PROM, 82S147	136092-0001
20R/S	Integrated Circuit, CPU, PLCC	137658-101
21F	Integrated Circuit, 74LS378	137305-001
21L	GAL16V8, 25 ns	136092-0006
21N	Integrated Circuit, 74F163	137345-001
21P	PROM, 82S147	136092-0003
22C	EPROM, 200 ns, 128K x 8	136092-0032
22D	EPROM, 200 ns, 128K x 8	136092-0031
22J	EPROM, 200 ns, 128K x 8	136092-0030
22L	Integrated Circuit, 74LS151	137101-001
22N	Integrated Circuit, 74F163	137345-001
22P	PROM, 82S147	136092-0002
22R	Integrated Circuit, 74LS379	137374-001

Designator	Description	Part No.
	Capacitors	
C1, C2	Capacitor, 100 pF, 100 V, ±5%, Ceramic	122016-101
C3-C6	Capacitor, .1 µF, 50 V, +80%–20%, Ceramic	122002-104
C7-C10	Capacitor, .01 µF, 50 V, +80%–20%, Ceramic	122002-103
C11, C12	Capacitor, 1000 pF, 100 V, ±10%, Ceramic	122015-102
C13-C17	Capacitor, 100 pF, 100 V, ±5%, Ceramic	122016-101
C18-C42	Capacitor, .01 µF, 50 V, +80%–20%, Ceramic	122002-103
C43	Capacitor, 100 µF, 16 V, Electrolytic, Radial	123013-107
C44, C45	Capacitor, .1 µF, 50 V, +80%–20%, Ceramic	122002-104
C46	Capacitor, 100 pF, 100 V, ±5%, Ceramic	122016-101
C47, C48	Capacitor, .1 µF, 50 V, +80%–20%, Ceramic	122002-104
C49-C55	Capacitor, 100 pF, 100 V, ±5%, Ceramic	122016-101
C56	Capacitor, .1 µF, 50 V, +80%–20%, Ceramic	122002-104
C57-C60	Capacitor, 100 pF, 100 V, ±5%, Ceramic	122016-101
C61-C74	Capacitor, .1 µF, 50 V, +80%–20%, Ceramic	122002-104
C75	Capacitor, 1000 pF, 100 V, ±5%, Ceramic	122016-102
C76	Capacitor, .01 µF, 50 V, +80%–20%, Ceramic	122002-103
C77	Capacitor, 1000 pF, 100 V, ±5%, Ceramic	122016-102
C78-C88	Capacitor, .1 µF, 50 V, +80%–20%, Ceramic	122002-104
C89	Capacitor, 100 pF, 100 V, ±5%, Ceramic	122016-101
C90, C91, C93-C169	Capacitor, .1 µF, 50 V, +80%-20%, Cer.	122002-104
C170, C171	Capacitor, 10 pF, 100 V, ±5%, Cer.	122016-100
C172-C200	Capacitor, .1 µF, 50 V, +80%–20%, Ceramic	122002-104
C201, C202	Capacitor, 100 pF, 100 V, ±5%, Cer.	122016-101
C203-C282	Capacitor, .1 µF, 50 V, +80%–20%, Cer.	122002-104

Guardians of the 'Hood Game PCB Assembly
Parts List, Continued

Designator	Description	Part No.
	Diodes	
CR1, CR2	Diode, 1N4001	131048-001
CR3	Diode, MV5053, Light-Emitting	131027-002
	Test Points, Connectors, and Inductors	
GND1, 2	Test Point	179051-001
J1	Connector, 11 Circuit, Header, .100 Ctr, Key 2	179118-011
J4, J9, J10	Connector, 2 Circuit, Header, .100 Ctr	179048-002
JAUD	Connector, 36 Ckt, .1 Header, Long	179300-036
JPL3	Connector, 15 Ckt, Header, .100 Ctr	179118-015
JSYNC	Connector, 3 Ckt, Header, .100 Ctr	179048-003
STEST	Connector, 2 Circuit, Header, .100 Ctr	179048-002
VCR	Connector, 2 Circuit, Header, .100 Ctr	179048-002
WDOG	Connector, 2 Circuit, Header, .100 Ctr	179048-002
L1	Inductor, 100 µH	141024-001
	Transistors	
Q1-Q3	Transistor, 2N3904	133041-001
Q4-Q7	Transistor, 2N5306	133033-001
Q8	Transistor, 2N3904	133041-001
	Resistors	
R1	Resistor, 100 Ω, ±5%, 1/8 W	110027-101
R2	Resistor, 15 Ω, ±5%, 1/8 W	110027-150
R3	Resistor, 100 Ω, ±5%, 1/8 W	110027-101
R4	Resistor, 15 Ω, ±5%, 1/8 W	110027-150
R5	Resistor, 100 Ω, ±5%, 1/8 W	110027-101
R6	Resistor, 15 Ω, ±5%, 1/8 W	110027-150
R7-R9	Resistor, 470 Ω, ±5%, 1/8 W	110027-471
R10	Resistor, 2.4 K Ω, ±5%, 1/8 W	110027-242
R11	Resistor, 1 K Ω, ±5%, 1/8 W	110027-102
R12	Resistor, 10 Ω, ±5%, 1/8 W	110027-100
R13	Resistor, 2.4 K Ω, ±5%, 1/8 W	110027-242
R14	Resistor, 1 K Ω, ±5%, 1/8 W	110027-102
R15	Resistor, 10 Ω, ±5%, 1/8 W	110027-100
R16	Resistor, 2.4 K Ω, ±5%, 1/8 W	110027-242
R17	Resistor, 1 K Ω, ±5%, 1/8 W	110027-102
R18	Resistor, 10 Ω, ±5%, 1/8 W	110027-100
R19	Resistor, 0 Ω, ±5%, 1/4 W	110005-001
R20-R45	Resistor, 1 K Ω, ±5%, 1/8 W	110027-102
R46-R48, R50, R52-R65	Resistor, 470 Ω, ±5%, 1/8 W	110027-471
R66, R67	Resistor, 10 K Ω, ±5%, 1/8 W	110027-103
R68, R69	Resistor, 470 Ω, ±5%, 1/8 W	110027-471
R70-R73	Resistor, 1 K Ω, ±5%, 1/8 W	110027-102
R74-, R77	Resistor, 470 Ω, ±5%, 1/8 W	110027-471
R78-R81	Resistor, 1 K Ω, ±5%, 1/8 W	110027-102
R82, R83	Resistor, 470 Ω, ±5%, 1/8 W	110027-471
R84, R85	Resistor, 1 K Ω, ±5%, 1/8 W	110027-102
R86	Resistor, 470 Ω, ±5%, 1/8 W	110027-471
R87	Resistor, 1 K Ω, ±5%, 1/8 W	110027-102
R88-R90	Resistor, 470 Ω, ±5%, 1/8 W	110027-471
R91-R93	Resistor, 1 K Ω, ±5%, 1/8 W	110027-102
R94	Resistor, 220 Ω, ±5%, 1/8 W	110027-221
R95, R96	Resistor, 100 Ω, ±5%, 1/8 W	110027-101
R97-R105	Resistor, 10 K Ω, ±5%, 1/8 W	110027-103
R106	Resistor, 240 Ω, ±5%, 1/8 W	110027-241
R107	Resistor, 100 K Ω, ±5%, 1/8 W	110027-104
R108	Resistor, 10 K Ω, ±5%, 1/8 W	110027-103
R110-R112	Resistor, 1 K Ω, ±5%, 1/8 W	110027-102
R113, R117, R118	Resistor, 10 Ω, ±5%, 1/8 W	110027-100
R119-R121	Resistor, 1 K Ω, ±5%, 1/8 W	110027-102
R122	Resistor, 10 Ω, ±5%, 1/8 W	110027-100
R123-R125	Resistor, 10 K Ω, ±5%, 1/8 W	110027-103
R126	Resistor, 10 Ω, ±5%, 1/8 W	110027-100
R127	Resistor, 10 K Ω, ±5%, 1/8 W	110027-103
R128-R130	Resistor, 1 K Ω, ±5%, 1/8 W	110027-102
R131	Resistor, 100 Ω, ±5%, 1/8 W	110027-101
R132, R133	Resistor, 10 K Ω, ±5%, 1/8 W	110027-103
R134	Resistor, 100 Ω, ±5%, 1/8 W	110027-101
R135	Resistor, 470 Ω, ±5%, 1/8 W	110027-471
R136	Resistor, 10 K Ω, ±5%, 1/8 W	110027-103
R137, R139, R140	Resistor, 10 Ω, ±5%, 1/8 W	110027-100
R141	Resistor, 1 K Ω, ±5%, 1/8 W	110027-102
R143, R144	Resistor, 10 Ω, ±5%, 1/8 W	110027-100
R145-R150	Resistor, 1 K Ω, ±5%, 1/8 W	110027-102
R151	Resistor, 470 Ω, ±5%, 1/8 W	110027-471
	Crystals	
X1	Crystal, 20.000 MHz	144000-003
X2	Crystal, 14.318 MHz	144000-004

NOTES

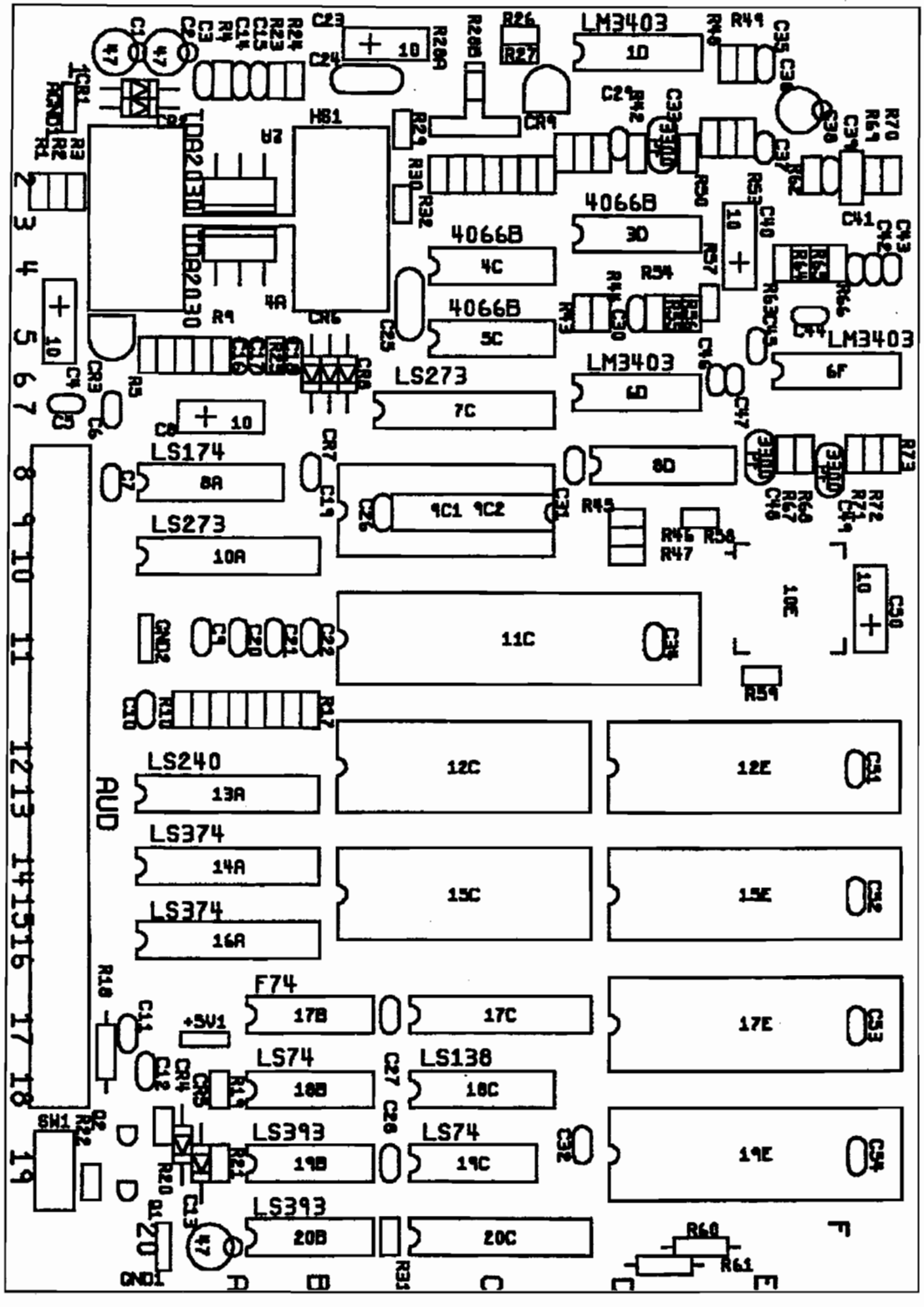


Figure 4-7 JSA Audio III PCB Assembly

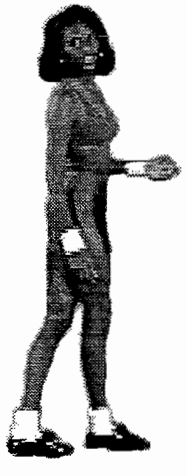
A048974-10 A

JSA III PCB Assembly
Parts List

Designator	Description	Part No.
	Sockets	
8D	Socket, 16 Pin, .300	179259-016
9C1	Socket, 24 Pin, .600	179257-024
11C	Socket, 40 Pin, .600	179257-040
12C	Socket, 28 Pin, .600	179257-028
12E	Socket, 32 Pin, .600	179257-032
15C	Socket, 28 Pin, .600	179257-028
15E	Socket, 32 Pin, .600	179257-032
17C	Socket, 20 Pin, .300	179259-020
17E, 19E	Socket, 32 Pin, .600	179257-032
20C	Socket, 20 Pin, .300	179259-020
	Miscellaneous Hardware	
++1005V1	Test Point	179051-001
AGND1	Test Point	179051-001
GND1,GND2	Test Point	179051-001
—	Nut/Washer Assy.	177026-0036
HS1	Heat Sink, TDA2030	178190-032
JAUD	Connector, 36 Ckt, .1 Bottom Entry	179299-036
SW1	Switch, Slide, SPDT	160040-001
—	Nut/Washer, Zinc	177026-0036
—	Screw, Pan-Head, #6-32x3/8, Cross-Recessed, Cadmium	72-1606S
—	Thermal Compound	107031-001
	Integrated Circuits	
1D	Integrated Circuit, Quad Op-Amp, LM3403	137673-001
2A	Integrated Circuit, TDA2030	137301-001
3D	Integrated Circuit, 4066B	137580-001
4A	Integrated Circuit, TDA2030	137301-001
4C, 5C	Integrated Circuit, 4066B	137580-001
6D, 6F	Integrated Circuit, Quad Op-Amp, LM3403	137673-001
7C	Integrated Circuit, 74LS273	137040-001
8A	Integrated Circuit, 74LS174	137122-001
8D	Integrated Circuit, YM3012	137402-001
9C1	Integrated Circuit, YM2151	137401-001
10A	Integrated Circuit, 74LS273	137040-001
11C	Integrated Circuit, 6502 A	137577-001
12C	EPROM, 200 ns, 64K x 8	136092-0080
12E	EPROM, 200 ns, 128K x 8	136089-1051
13A	Integrated Circuit, 74LS240	137251-001
14A	Integrated Circuit, 74LS374	137144-001
15C	Integrated Circuit, RAM, 8K x 8, 100 ns, .6	137535-004
15E	EPROM, 200 ns, 128K x 8	136089-1050
16A	Integrated Circuit, 74LS374	137144-001
17B	Integrated Circuit, 74F74	137436-001
17C	GAL16V8, 25 ns	136085-1038
17E	EPROM, 200 ns, 128K x 8	136089-1049
18B	Integrated Circuit, 74LS74	137023-001
18C	Integrated Circuit, 74LS138	137177-001
19B	Integrated Circuit, 74LS393	137146-001
19C	Integrated Circuit, 74LS74	137023-001
19E	EPROM, 150 ns, 128K x 8	136092-0081
20B	Integrated Circuit, 74LS393	137146-001
20C	GAL16V8, 25 ns	136085-2046
	Capacitors	
C1,C2	Capacitor, 47 µF, 50V, Electrolytic	123015-476
C3	Capacitor, .1 µF, 50 V, +80%-20%, Ceramic	122002-104
C4	Capacitor, 10 µF, 25 V, Electrolytic	124009-106
C5-C7	Capacitor, .1 µF, 50 V, +80%-20%, Ceramic	122002-104
C8	Capacitor, 10 µF, 25 V, Electrolytic	124009-106
C9, C10	Capacitor, .1 µF, 50 V, +80%-20%, Ceramic	122002-104
C13	Capacitor, 47 µF, 50V, Electrolytic	123015-476
C14-C22	Capacitor, .1 µF, 50 V, +80%-20%, Ceramic	122002-104
C23	Capacitor, 10 µF, 25 V, Electrolytic	124009-106
C24, C25	Capacitor, .22 µF, 50 V, ±10%, Ceramic	122015-224
C26-C28	Capacitor, .1 µF, 50 V, +80%-20%, Ceramic	122002-104
C29	Capacitor, 1000 pF, 50 V, ±10%, Ceramic	122015-102
C30-C32	Capacitor, .1 µF, 50 V, +80%-20%, Ceramic	122002-104
C33	Capacitor, 3300 pF, 50 V, ±5%, NPO, +80%-20%	122019-332
C34, C35	Capacitor, .1 µF, 50 V, +80%-20%, Ceramic	122002-104
C37	Capacitor, 2200 pF, 50 V, +80%-10%, Ceramic	122015-222
C38	Capacitor, .1 µF, 50 V, +80%-20%, Ceramic	122002-104
C39	Capacitor, .015 µF, 100 V, ±5%, Poly	126009-153
C40	Capacitor, 10 µF, 25 V, Electrolytic	124009-106
C41	Capacitor, 1000 pF, 50 V, ±10%, Ceramic	122015-102
C42, C43	Capacitor, 6800 pF, 50 V, 80%-10%, Ceramic	122015-682

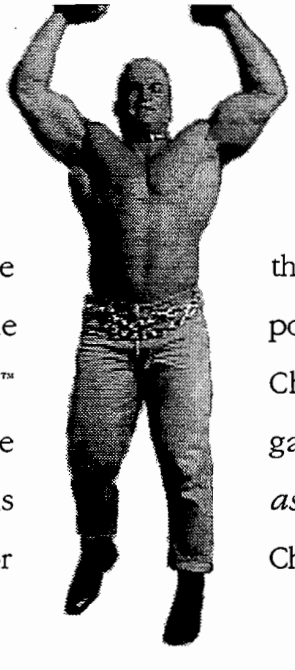
JSA III PCB Assembly
Parts List, Continued

Designator	Description	Part No.
C44, C45	Capacitor, .1 µF, 50 V, +80%-20%, Ceramic	122002-104
C46, C47	Capacitor, 1000 pF, 50 V, ±10%, Ceramic	122015-102
C48, C49	Capacitor, 3300 pF, 50 V, ±5%, NPO	122019-332
C50	Capacitor, 10 µF, 25 V, Electrolytic	124009-106
C51-C54	Capacitor, .1 µF, 50 V, +80%-20%, Ceramic	122002-104
	Diodes	
CR1, CR2	Diode, 1N4001	131048-001
CR3	Diode, MV5053, Light-Emitting	131027-002
CR6-CR8	Diode, 1N4001	131048-001
CR9	Diode, MV5053, Light-Emitting	131027-002
	Resistors	
R1, R2	Resistor, 10 K Ω, ±5%, 1/8 W	110027-103
R3	Resistor, 33 K Ω, ±5%, 1/8 W	110027-333
R4	Resistor, 1 Ω, ±5%, 1/8 W	110027-010
R5	Resistor, 33 K Ω, ±5%, 1/8 W	110027-333
R6	Resistor, 470 Ω, ±5%, 1/8 W	110027-471
R7	Resistor, 33 K Ω, ±5%, 1/8 W	110027-333
R8	Resistor, 1 K Ω, ±5%, 1/8 W	110027-102
R9	Resistor, 33 K Ω, ±5%, 1/8 W	110027-333
R10	Resistor, 470 Ω, ±5%, 1/8 W	110027-471
R11	Resistor, 1 K Ω, ±5%, 1/8 W	110027-102
R12	Resistor, 470 Ω, ±5%, 1/8 W	110027-471
R13	Resistor, 1 K Ω, ±5%, 1/8 W	110027-102
R14	Resistor, 470 Ω, ±5%, 1/8 W	110027-471
R15	Resistor, 1 K Ω, ±5%, 1/8 W	110027-102
R16	Resistor, 470 Ω, ±5%, 1/8 W	110027-471
R17, R20	Resistor, 1 K Ω, ±5%, 1/8 W	110027-102
R22	Resistor, 470 Ω, ±5%, 1/8 W	110027-471
R23	Resistor, 33 K Ω, ±5%, 1/8 W	110027-333
R24	Resistor, 1 K Ω, ±5%, 1/8 W	110027-102
R25	Resistor, 1 Ω, ±5%, 1/8 W	110027-010
R26	Resistor, 1.2 K Ω, ±5%, 1/8 W	110027-122
R28B	Resistor, 10 Ω, ±5%, 1/8 W	110027-100
R29	Resistor, 5.1 K Ω, ±5%, 1/8 W	110027-512
R30	Resistor, 15 K Ω, ±5%, 1/8 W	110027-153
R31	Resistor, 10 K Ω, ±5%, 1/8 W	110027-103
R32	Resistor, 620 K Ω, ±5%, 1/8 W	110027-624
R33	Resistor, 330 K Ω, ±5%, 1/8 W	110027-334
R34	Resistor, 82 K Ω, ±5%, 1/8 W	110027-823
R35	Resistor, 20 K Ω, ±5%, 1/8 W	110027-203
R36	Resistor, 39 K Ω, ±5%, 1/8 W	110027-393
R37	Resistor, 160 K Ω, ±5%, 1/8 W	110027-164
R38	Resistor, 10 K Ω, ±5%, 1/8 W	110027-103
R40	Resistor, 30 K Ω, ±5%, 1/8 W	110027-303
R41	Resistor, 15 K Ω, ±5%, 1/8 W	110027-153
R42	Resistor, 150 K Ω, ±5%, 1/8 W	110027-154
R43	Resistor, 7.5 K Ω, ±5%, 1/8 W	110027-752
R44	Resistor, 15 K Ω, ±5%, 1/8 W	110027-153
R48	Resistor, 3.3 K Ω, ±5%, 1/8 W	110027-332
R49	Resistor, 33 K Ω, ±5%, 1/8 W	110027-333
R50	Resistor, 30 K Ω, ±5%, 1/8 W	110027-303
R51	Resistor, 6.2 K Ω, ±5%, 1/8 W	110027-622
R52, R53	Resistor, 12 K Ω, ±5%, 1/8 W	110027-123
R54	Resistor, 7.5 K Ω, ±5%, 1/8 W	110027-752
R55	Resistor, 560 Ω, ±5%, 1/8 W	110027-561
R56	Resistor, 470 Ω, ±5%, 1/8 W	110027-471
R57	Resistor, 100 Ω, ±5%, 1/8 W	110027-101
R59	Resistor, 10 Ω, ±5%, 1/8 W	110027-100
R62	Resistor, 15 K Ω, ±5%, 1/8 W	110027-153
R63	Resistor, 10 K Ω, ±5%, 1/8 W	110027-103
R64	Resistor, 15 K Ω, ±5%, 1/8 W	110027-153
R65	Resistor, 7.5 K Ω, ±5%, 1/8 W	110027-752
R66	Resistor, 10 K Ω, ±5%, 1/8 W	110027-103
R67	Resistor, 3.3 K Ω, ±5%, 1/8 W	110027-332
R68	Resistor, 6.8 K Ω, ±5%, 1/8 W	110027-682
R69	Resistor, 16 K Ω, ±5%, 1/8 W	110027-163
R70	Resistor, 2 K Ω, ±5%, 1/8 W	110027-202
R71	Resistor, 6.8 K Ω, ±5%, 1/8 W	110027-682
R72	Resistor, 10 K Ω, ±5%, 1/8 W	110027-103
R73	Resistor, 20 K Ω, ±5%, 1/8 W	110027-203

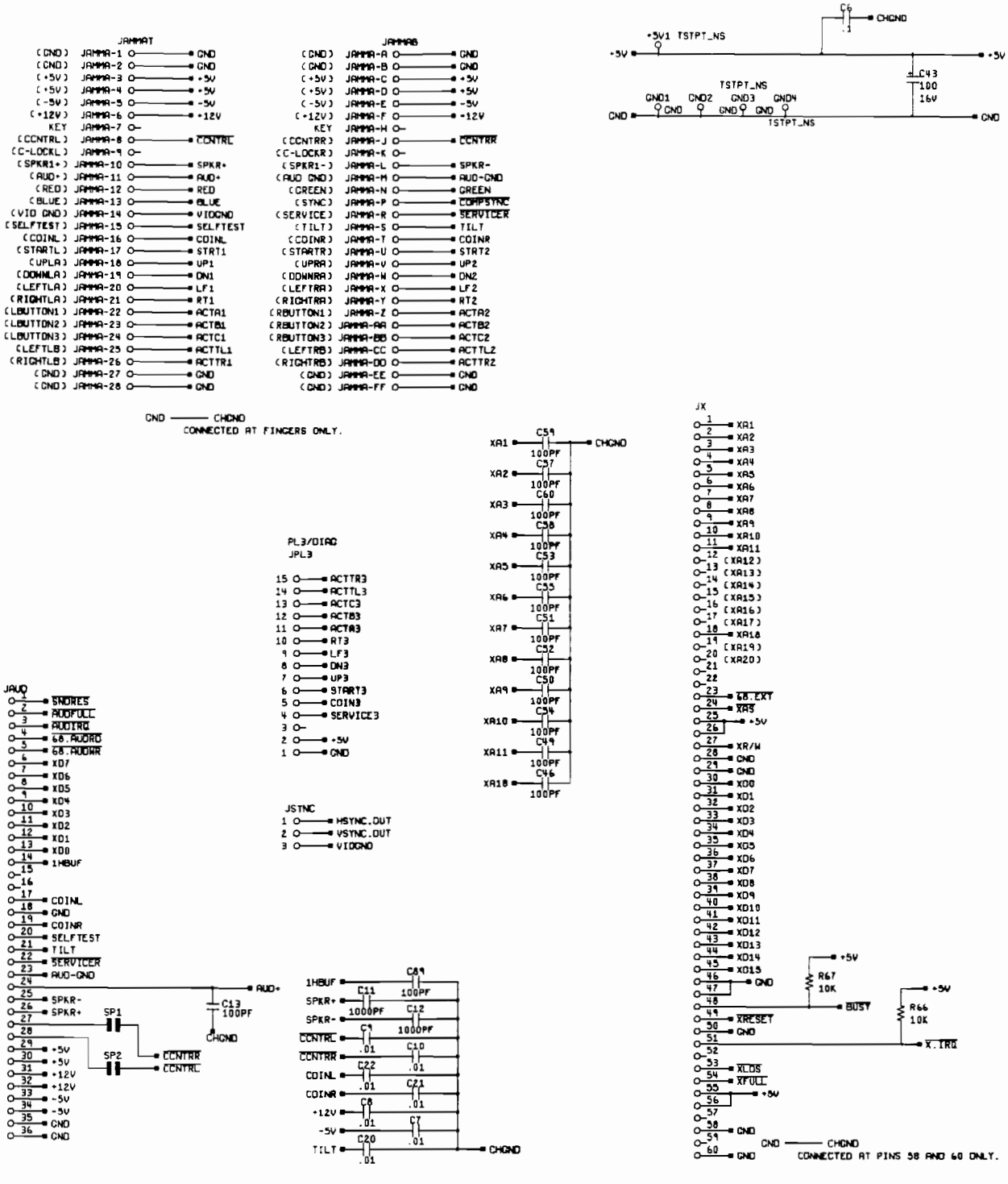


Schematic Diagrams

INTRODUCTION



THIS CHAPTER contains the schematic diagrams for the Guardians of the 'Hood™ game printed-circuit board and the JSA Audio III PCB. In addition, this chapter includes wiring diagrams for the entire game, the coin door, and the power supply, and the Hitron and Peter Chou switching power supplies. The game PCB and JSA Audio III PCB *assembly drawings* are illustrated in Chapter 4, Parts Illustrations.


JAMMA1
JAMMA2
JAMMA3
JAMMA4
JAMMA5
JAMMA6
JAMMA7
JAMMA8
JAMMA9
JAMMA10
JAMMA11
JAMMA12
JAMMA13
JAMMA14
JAMMA15
JAMMA16
JAMMA17
JAMMA18
JAMMA19
JAMMA20
JAMMA21
JAMMA22
JAMMA23
JAMMA24
JAMMA25
JAMMA26
JAMMA27
JAMMA28
JAMMA-A
JAMMA-B
JAMMA-C
JAMMA-D
JAMMA-E
JAMMA-F
JAMMA-H
JAMMA-J
JAMMA-K
JAMMA-L
JAMMA-M
JAMMA-N
JAMMA-P
JAMMA-R
JAMMA-S
JAMMA-T
JAMMA-U
JAMMA-V
JAMMA-W
JAMMA-X
JAMMA-Y
JAMMA-Z
JAMMA-AA
JAMMA-BB
JAMMA-CC
JAMMA-DD
JAMMA-EE
JAMMA-FF
GND
+5V
+12V
-5V
KEY
CONTRC
CONTRR
SPKR+
SPKR-
AUD+
AUD-GND
RED
GREEN
BLUE
VIDGND
SELFTEST
COINL
COINR
STRT1
STRT2
UP1
UP2
DN1
DN2
LF1
LF2
RT1
RT2
ACTA1
ACTA2
ACTB1
ACTB2
ACTC1
ACTC2
ACTTL1
ACTTL2
ACTTR1
ACTTR2
COMPSYNC
SERVICER
TILT
C6
.1
CHGND
+5V1 TSTPT_NS
C43
100
16V
TSTPT_NS
GND1
GND2
GND3
GND4
GND CONNECTED AT FINGERS ONLY.
PL3/DIAG
JPL3
ACTTR3
ACTTL3
ACTC3
ACTB3
ACTA3
RT3
LF3
DN3
UP3
START3
COIN3
SERVICE3
JSYNC
HSYNC.OUT
VSYNC.OUT
VIDGND
JAUD
SNORES
AUDFULL
AUDIRQ
68.AUDRD
68.AUDWR
XD7
XD6
XD5
XD4
XD3
XD2
XD1
XD0
1HBUF
SP1
SP2
C13
100PF
C59
C57
C60
C58
C53
C55
C51
C52
C50
C54
C49
C46
XA1
XA2
XA3
XA4
XA5
XA6
XA7
XA8
XA9
XA10
XA11
XA18
JX
XA12
XA13
XA14
XA15
XA16
XA17
XA19
XA20
68.EXT
XAS
XR/W
XD8
XD9
XD10
XD11
XD12
XD13
XD14
XD15
R67
10K
R66
10K
BUSY
XRESET
X.IRQ
XLDS
XFULL
C11
C12
C9
C10
C22
C21
C8
C7
C20
C19
1000PF
.01
.1
CND CONNECTED AT PINS 58 AND 60 ONLY.

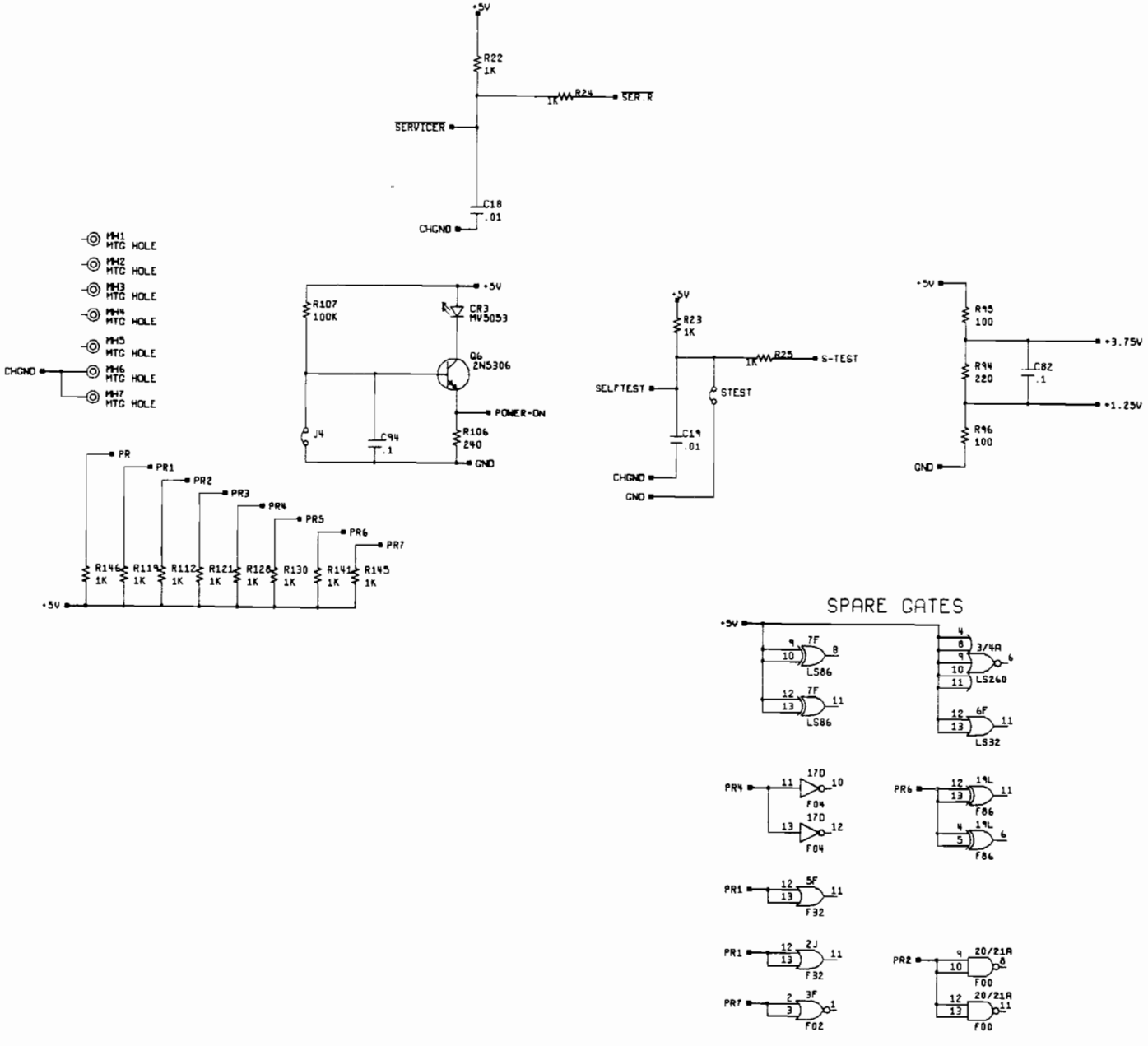
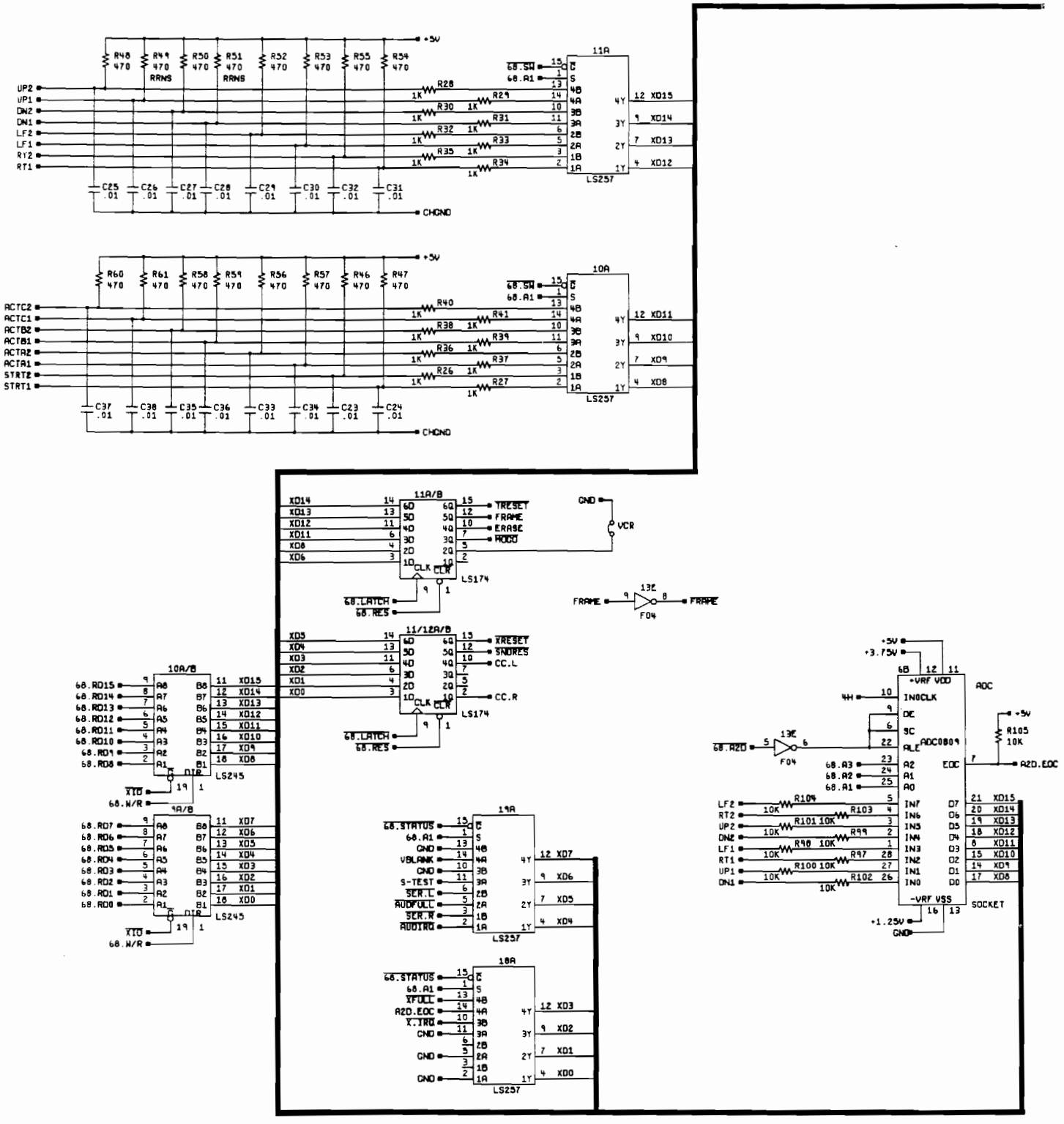


Figure 5-1 Guardians of the 'hood Game PCB Assembly Schematic Diagram

049756-06 B


+5V
R48 470
R49 470
R50 470
R51 470
R52 470
R53 470
R55 470
R54 470
RRNS
UP2
UP1
DN2
DN1
LF2
LF1
RT2
RT1
R28 1K
R29 1K
R30 1K
R31 1K
R32 1K
R33 1K
R35 1K
R34 1K
11A
68.SW
68.A1
12 XD15
9 XD14
7 XD13
4 XD12
LS257
C25 .01
C26 .01
C27 .01
C28 .01
C29 .01
C30 .01
C32 .01
C31 .01
CHGND
R60 470
R61 470
R58 470
R59 470
R56 470
R57 470
R46 470
R47 470
ACTC2
ACTC1
ACTB2
ACTB1
ACTA2
ACTA1
STRT2
STRT1
R40 1K
R41 1K
R38 1K
R39 1K
R36 1K
R37 1K
R26 1K
R27 1K
10A
12 XD11
9 XD10
7 XD9
4 XD8
LS257
C37 .01
C38 .01
C35 .01
C36 .01
C33 .01
C34 .01
C23 .01
C24 .01
CHGND
XD14
XD13
XD12
XD11
XD8
XD6
11A/B
6D
5D
4D
3D
2D
1D
6Q
5Q
4Q
3Q
2Q
1Q
CLK
CLR
TRESET
FRAME
ERASE
MODE
LS174
68.LATCH
68.RES
GND
VCR
FRAME
13E
F04
FRAME
XD5
XD4
XD3
XD2
XD1
XD0
11/12A/B
XRESET
SNDRES
CC.L
CC.R
LS174
68.LATCH
68.RES
10A/B
68.RD15
68.RD14
68.RD13
68.RD12
68.RD11
68.RD10
68.RD9
68.RD8
A8
A7
A6
A5
A4
A3
A2
A1
B8
B7
B6
B5
B4
B3
B2
B1
11 XD15
12 XD14
13 XD13
14 XD12
15 XD11
16 XD10
17 XD9
18 XD8
DIR
LS245
XIO
68.W/R
9A/B
68.RD7
68.RD6
68.RD5
68.RD4
68.RD3
68.RD2
68.RD1
68.RD0
11 XD7
12 XD6
13 XD5
14 XD4
15 XD3
16 XD2
17 XD1
18 XD0
LS245
68.STATUS
68.A1
GND
VBLANK
GND
S-TEST
SER.L
AUDFULL
SER.R
AUDIRQ
19A
12 XD7
9 XD6
7 XD5
4 XD4
LS257
68.STATUS
68.A1
XFULL
A2D.EOC
X.IRQ
GND
GND
GND
18A
12 XD3
9 XD2
7 XD1
4 XD0
LS257
+5V
+3.75V
+VRF VDD
ADC
INCLK
OE
SC
ALE
ADC0809
68.A2D
13E
F04
68.A3
68.A2
68.A1
A2
A1
A0
EOC
A2D.EOC
R105 10K
LF2
RT2
UP2
DN2
LF1
RT1
UP1
DN1
R104 10K
R103 10K
R101 10K
R99 10K
R98 10K
R97 10K
R100 10K
R102 10K
IN7
IN6
IN5
IN4
IN3
IN2
IN1
IN0
D7
D6
D5
D4
D3
D2
D1
D0
21 XD15
20 XD14
19 XD13
18 XD12
8 XD11
15 XD10
14 XD9
17 XD8
-VRF VSS
SOCKET
+1.25V
GND

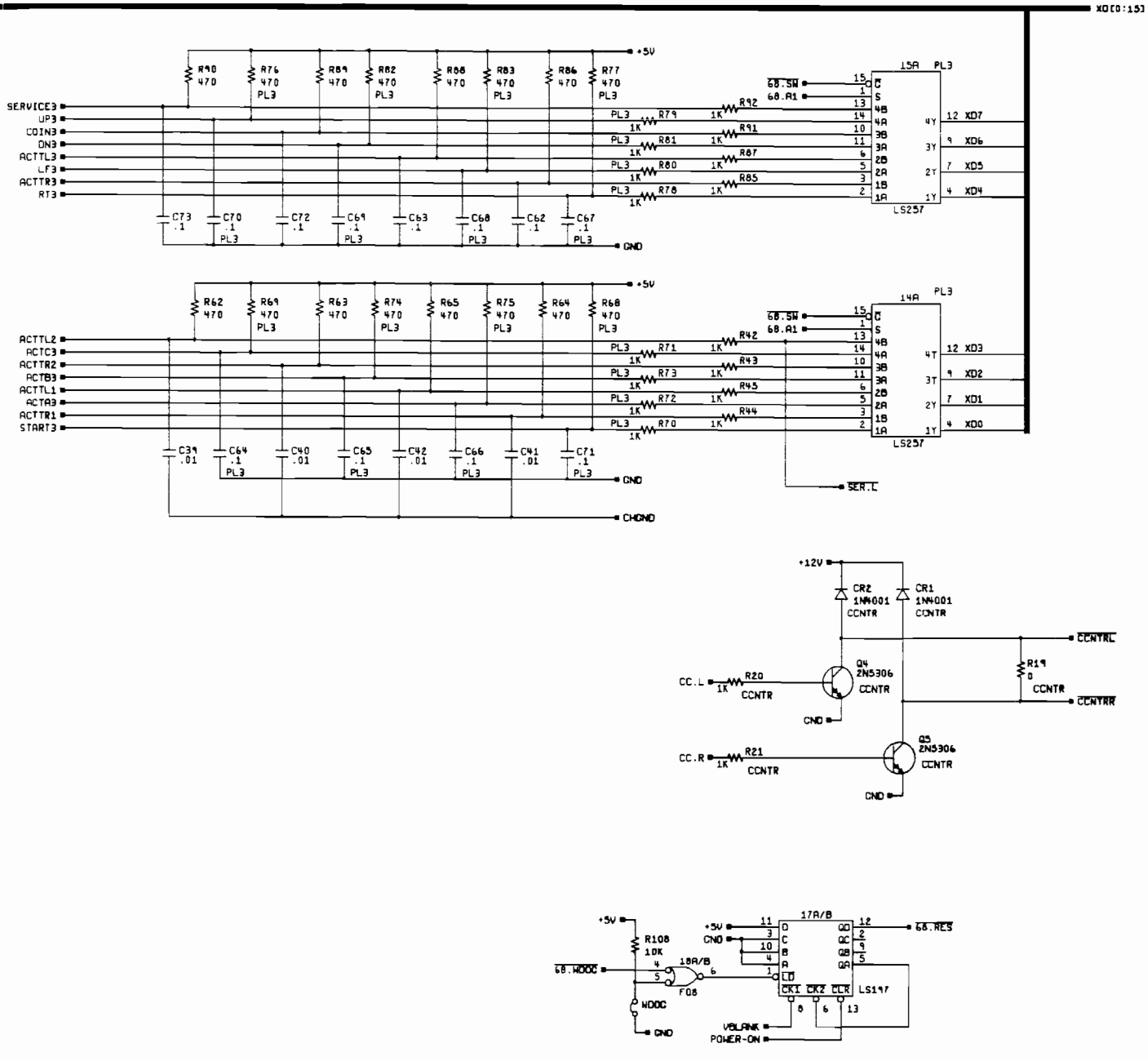


Figure 5-1 Guardians of the 'hood Game PCB Assembly Schematic Diagram

049756-06 B

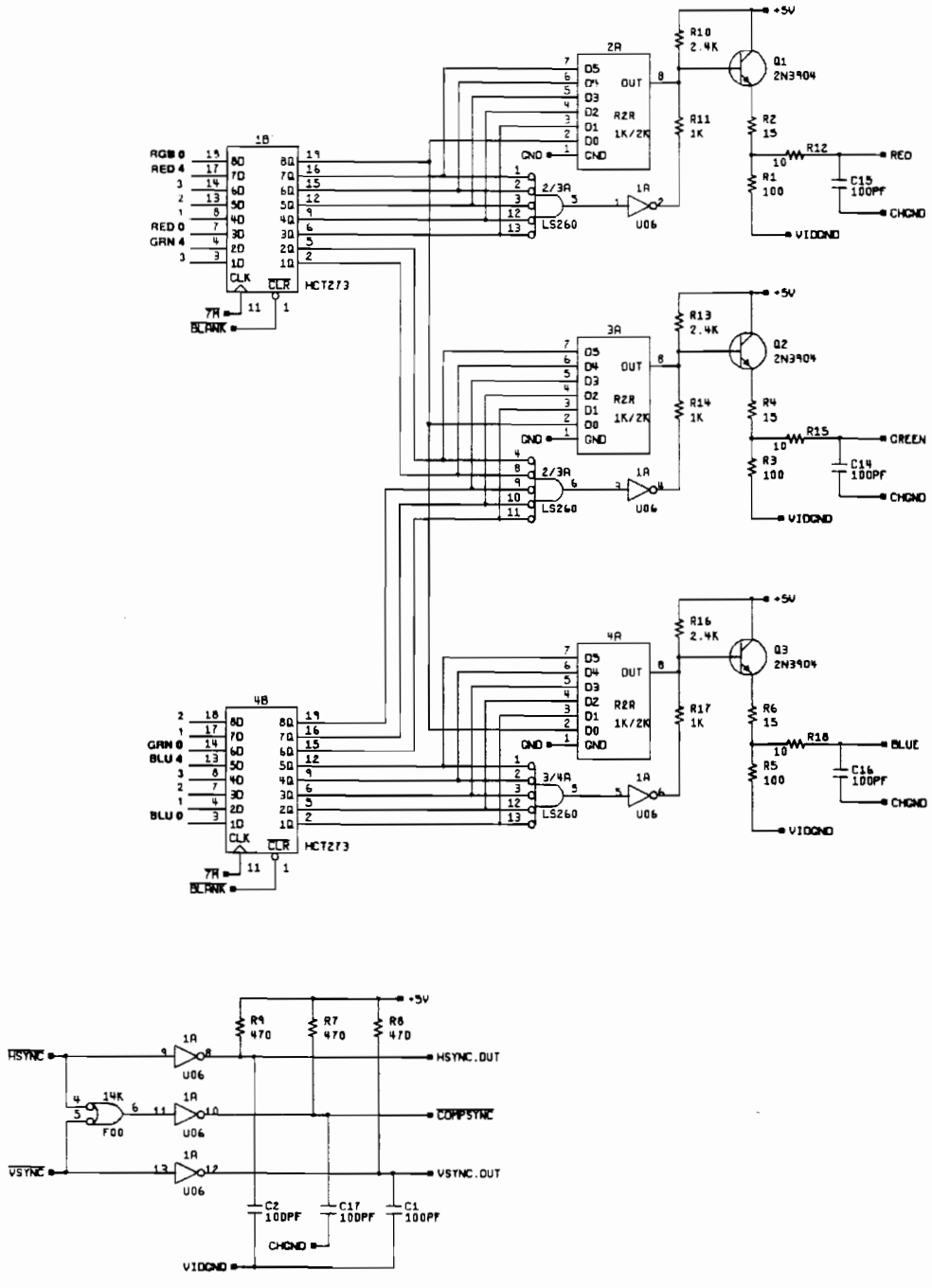


Figure 5-1 Guardians of the 'hood Game PCB Assembly Schematic Diagram

049756-06 B

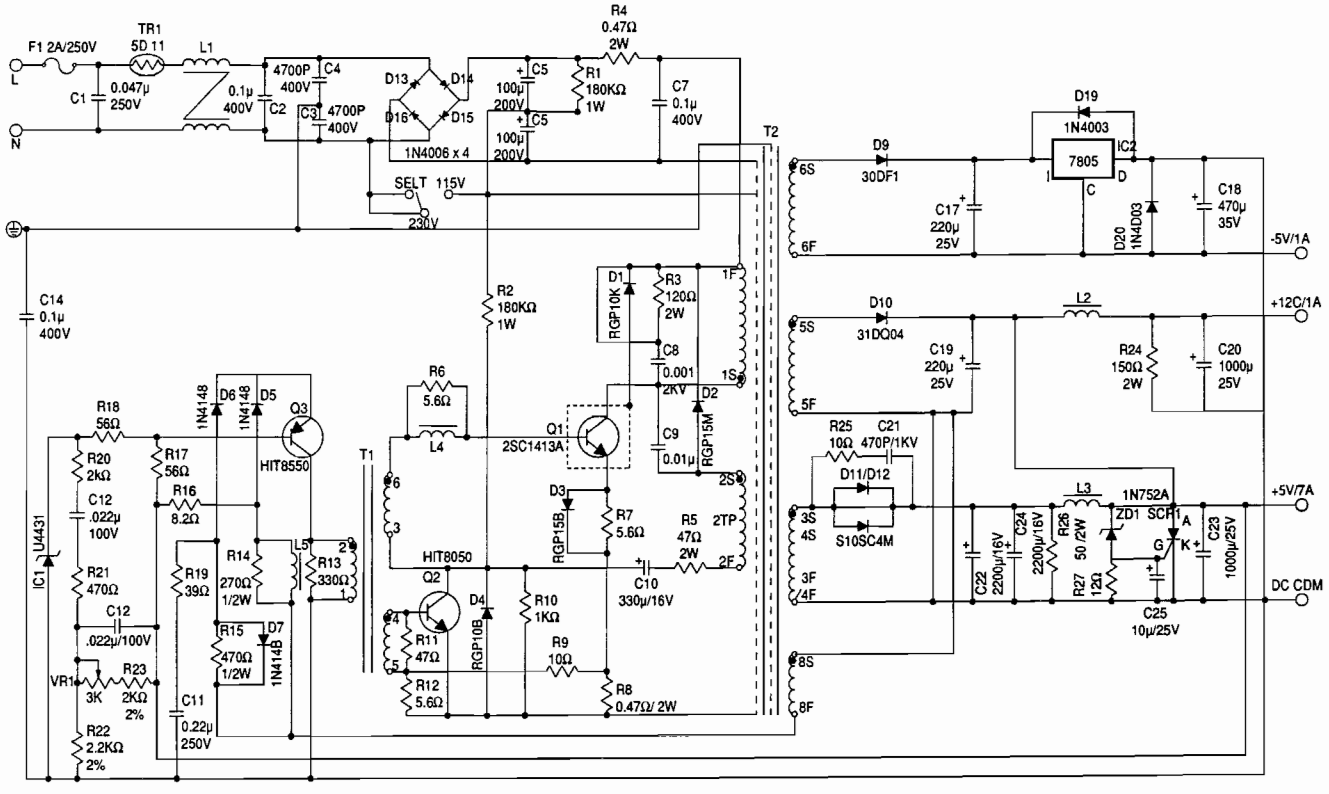


Figure 5-2 Hitron 5V, 7A Switching Power Supply (HSA-130) Schematic Diagram

149014-001

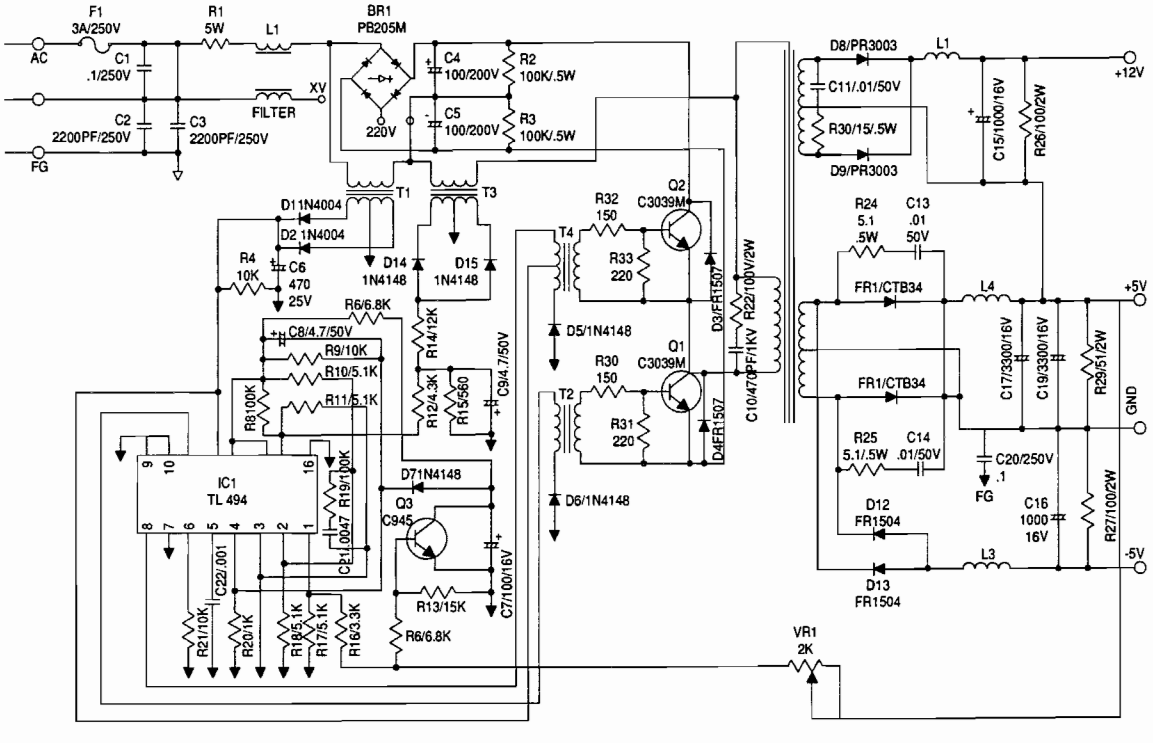
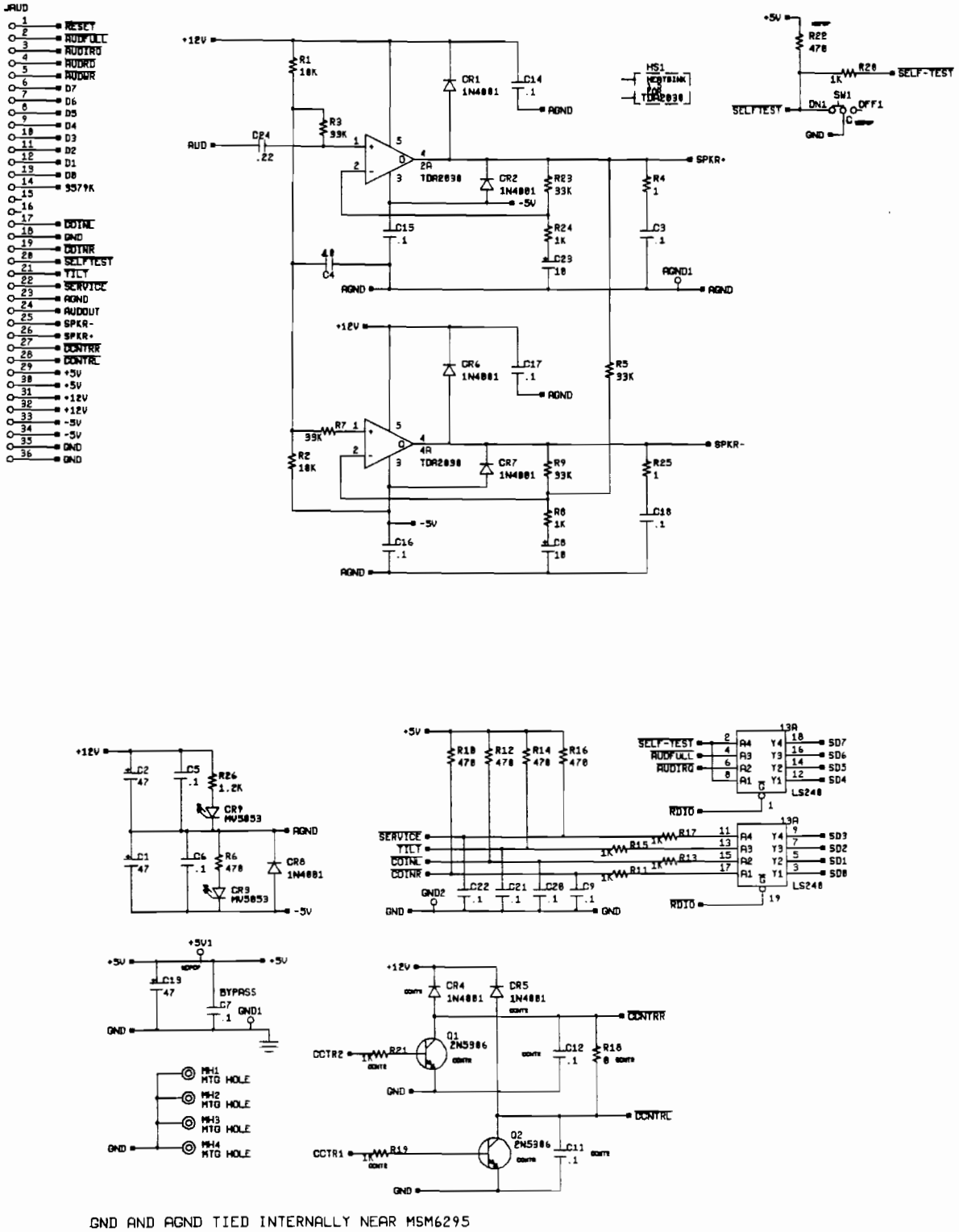


Figure 5-3 Peter Chou Power Supply Schematic Diagram *(optional)*

F102141288



GND AND AGND TIED INTERNALLY NEAR MSM6295

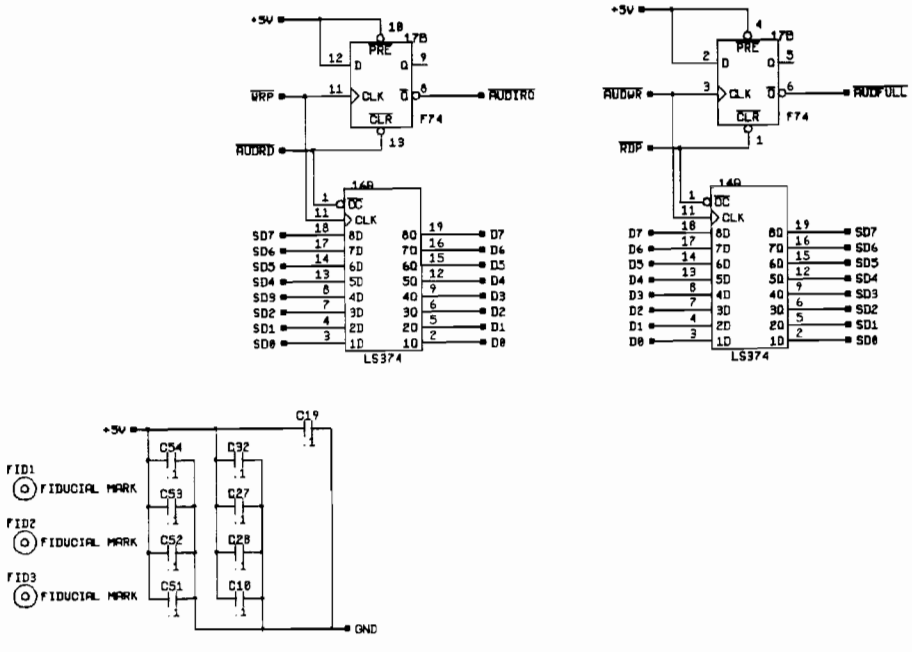
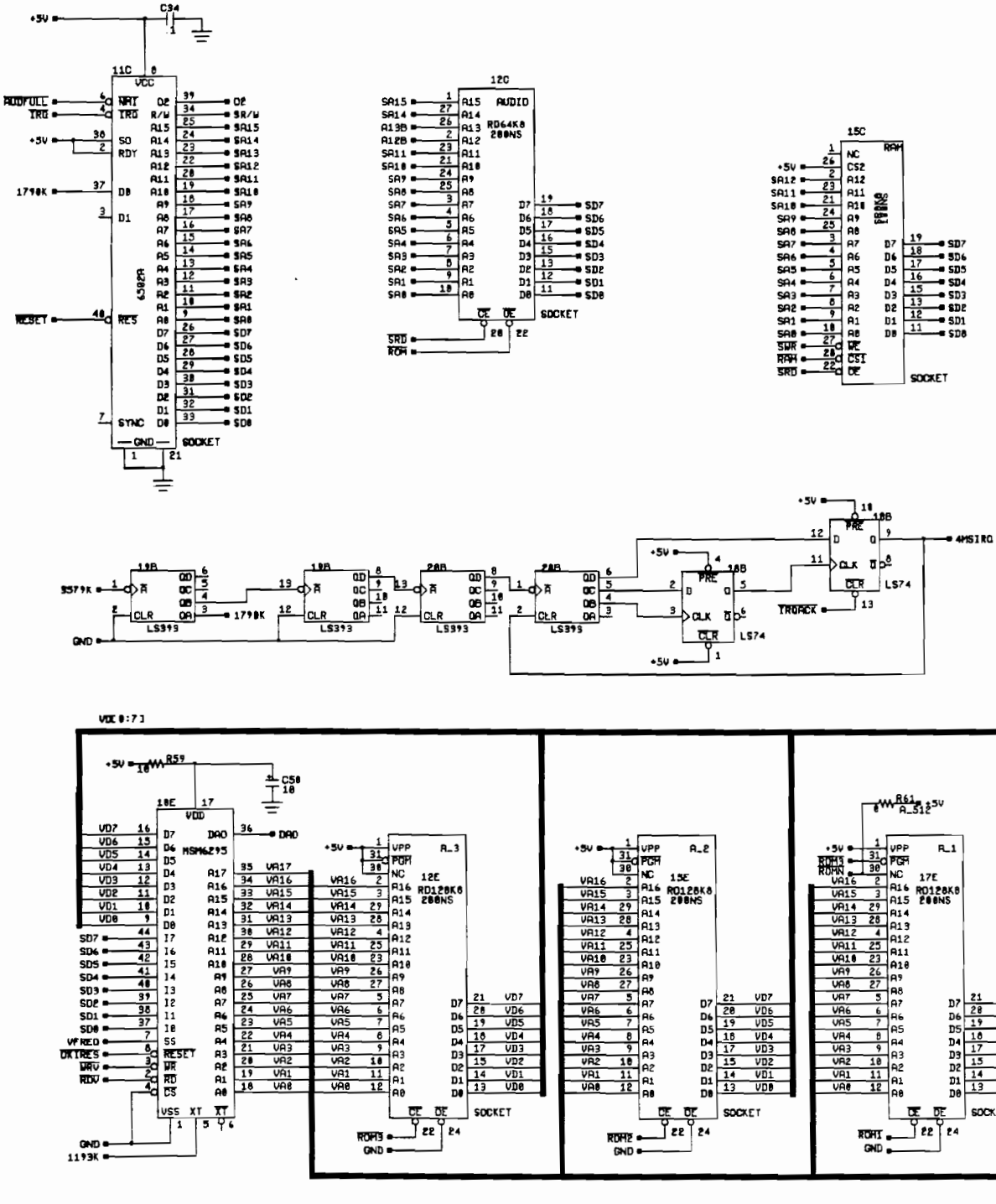


Figure 5-4 JSA Audio III PCB Assembly Schematic Diagram

048973-01 C


+5V
C34
11C
VCC
6502A
ADDFULL
IRQ
RDY
1790K
RESET
SYNC
GND
SOCKET
12C
AUDIO
RD64K8
200NS
SRD
ROM
15C
RAM
CS2
CS1
SWR
RAM
SRD
SOCKET
LS393
LS74
1790K
GND
4MSIRQ
TRQACK
VD[0:7]
R59
C58
10E
VDD
MSM6295
R61
A_512
12E
13E
17E
RD128K8
200NS
ROM3
ROM2
ROM1
1193K
VA[0:17]

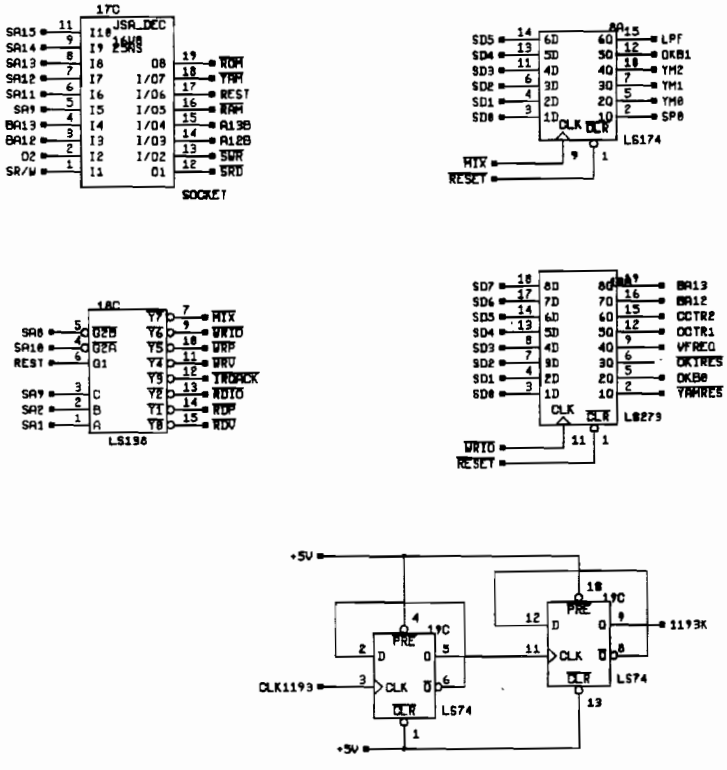
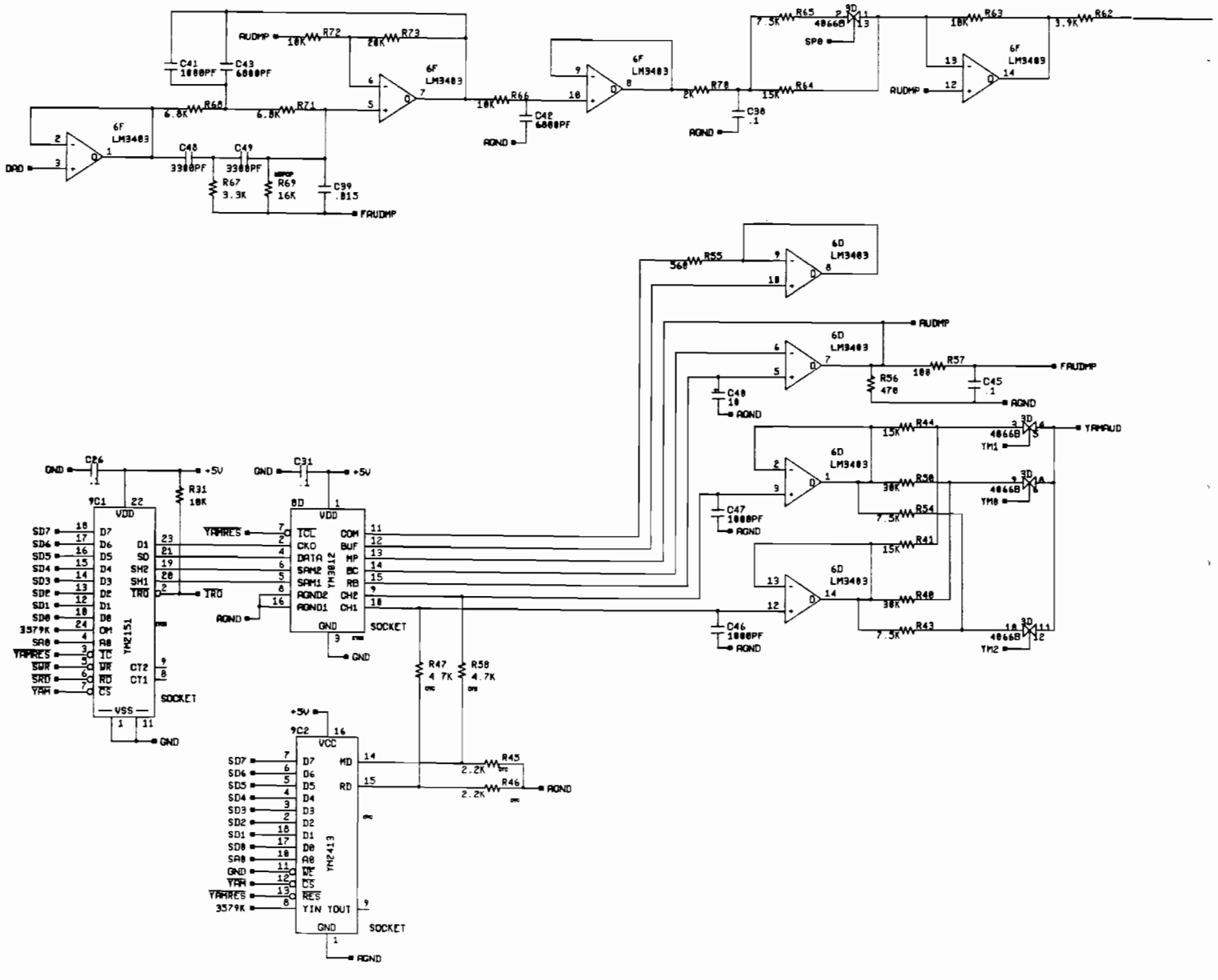


Figure 5-4 JSA Audio III PCB Assembly Schematic Diagram

048973-01 C


AUDMP
R72 10K
R73 20K
C41 1000PF
C43 6800PF
6F LM3403
R60 6.8K
R71 6.8K
DAD
6F LM3403
C48 3300PF
C49 3300PF
R67 3.3K
R69 16K
C39 .015
FAUDMP
R66 10K
C42 6800PF
AGND
6F LM3403
R78 2K
C38 .1
R65 7.5K
9D 4066B
SP0
R64 15K
R63 10K
R62 3.9K
6F LM3403
AUDMP
6D LM3403
R55 560
6D LM3403
AUDMP
R57 100
FAUDMP
R56 470
C45 .1
AGND
C40 10
AGND
6D LM3403
R44 15K
3D 4066B
YM1
YAMAUD
R50 30K
3D 4066B
YM0
R54 7.5K
C47 1000PF
AGND
6D LM3403
R41 15K
R40 30K
R43 7.5K
3D 4066B
YM2
C46 1000PF
AGND
GND
C26 .1
+5V
R31 10K
9C1
VDD
SD7
SD6
SD5
SD4
SD3
SD2
SD1
SD0
3579K
SA0
YAMRES
SWR
SRD
YAM
D7
D6
D5
D4
D3
D2
D1
D0
OM
A0
IC
WR
RD
CS
D1
SO
SM2
SM1
IRQ
CT2
CT1
YM2151
SOCKET
VSS
GND
C31 .1
GND
+5V
8D
VDD
YAMRES
AGND
TCL
CKO
DATA
SAM2
SAM1
AGND2
AGND1
COM
BUF
MP
BC
RB
CH2
CH1
YM3812
GND
SOCKET
GND
R47 4.7K
R58 4.7K
+5V
9C2
VCC
SD7
SD6
SD5
SD4
SD3
SD2
SD1
SD0
SA0
GND
YAM
YAMRES
3579K
D7
D6
D5
D4
D3
D2
D1
D0
A0
WE
CS
RES
YIN YOUT
MD
RD
YM2413
GND
SOCKET
AGND
R45 2.2K
R46 2.2K
AGND

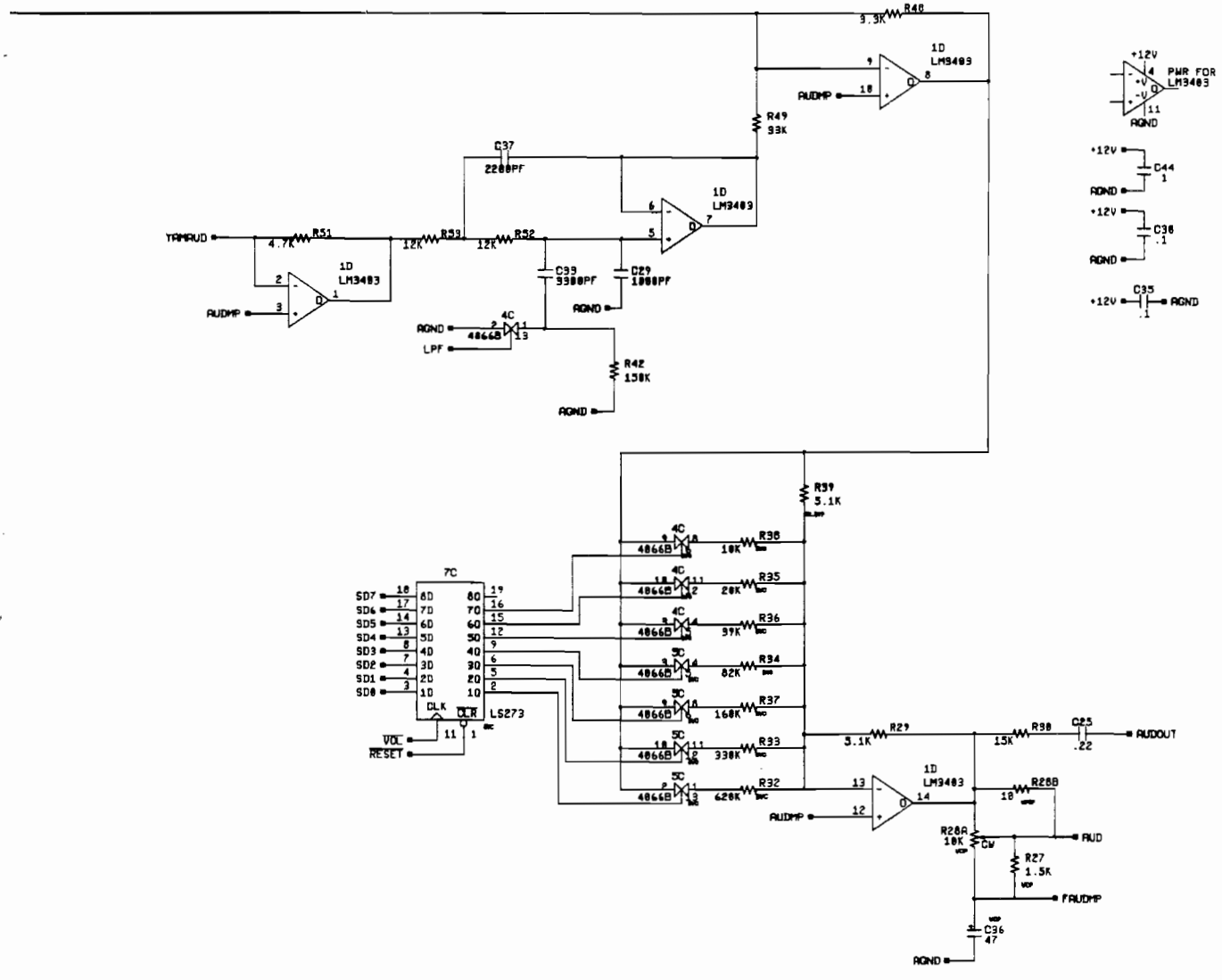
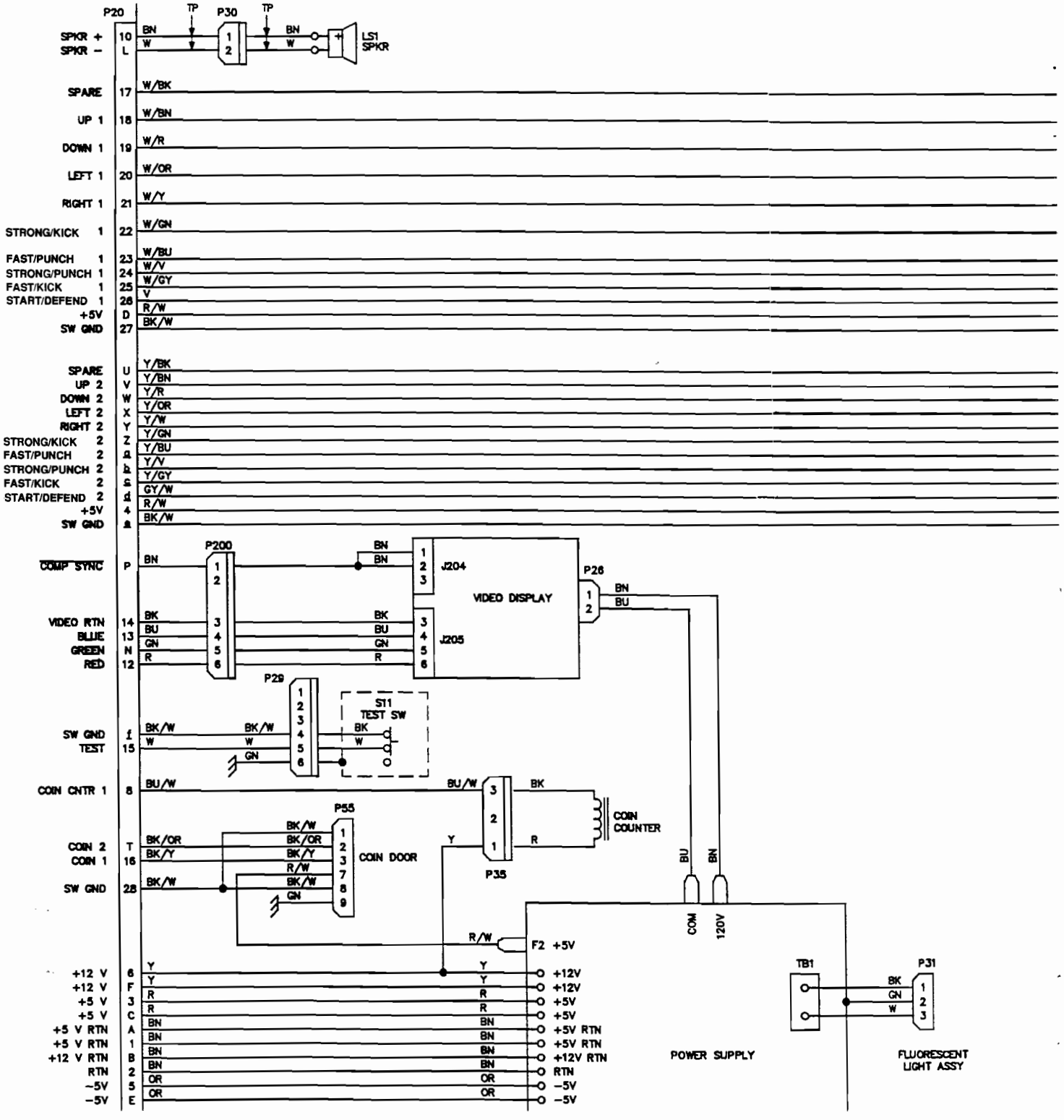


Figure 5-4 JSA Audio III PCB Assembly Schematic Diagram

048973-01 C


P20
TP
P30
TP
SPKR +
SPKR –
10
L
BN
W
LS1
SPKR
SPARE 17 W/BK
UP 1 18 W/BN
DOWN 1 19 W/R
LEFT 1 20 W/OR
RIGHT 1 21 W/Y
STRONG/KICK 1 22 W/GN
FAST/PUNCH 1 23 W/BU
STRONG/PUNCH 1 24 W/V
FAST/KICK 1 25 W/GY
START/DEFEND 1 26 V
+5V D R/W
SW GND 27 BK/W
SPARE U Y/BK
UP 2 V Y/BN
DOWN 2 W Y/R
LEFT 2 X Y/OR
RIGHT 2 Y Y/W
STRONG/KICK 2 Z Y/GN
FAST/PUNCH 2 a Y/BU
STRONG/PUNCH 2 b Y/V
FAST/KICK 2 c Y/GY
START/DEFEND 2 d GY/W
+5V 4 R/W
SW GND a BK/W
P200
COMP SYNC P BN
VIDEO RTN 14 BK
BLUE 13 BU
GREEN N GN
RED 12 R
J204
J205
VIDEO DISPLAY
P26
P29
ST1
TEST SW
SW GND f BK/W
TEST 15 W
COIN CNTR 1 8 BU/W
COIN 2 T BK/OR
COIN 1 16 BK/Y
SW GND 28 BK/W
P55
COIN DOOR
P35
COIN COUNTER
BU
BN
COM
120V
F2 +5V
+12 V 6 Y
+12 V F Y
+5 V 3 R
+5 V C R
+5 V RTN A BN
+5 V RTN 1 BN
+12 V RTN B BN
RTN 2 BN
–5V 5 OR
–5V E OR
+12V
+12V
+5V
+5V
+5V RTN
+5V RTN
+12V RTN
RTN
–5V
–5V
POWER SUPPLY
TB1
P31
BK
GN
W
FLUORESCENT
LIGHT ASSY

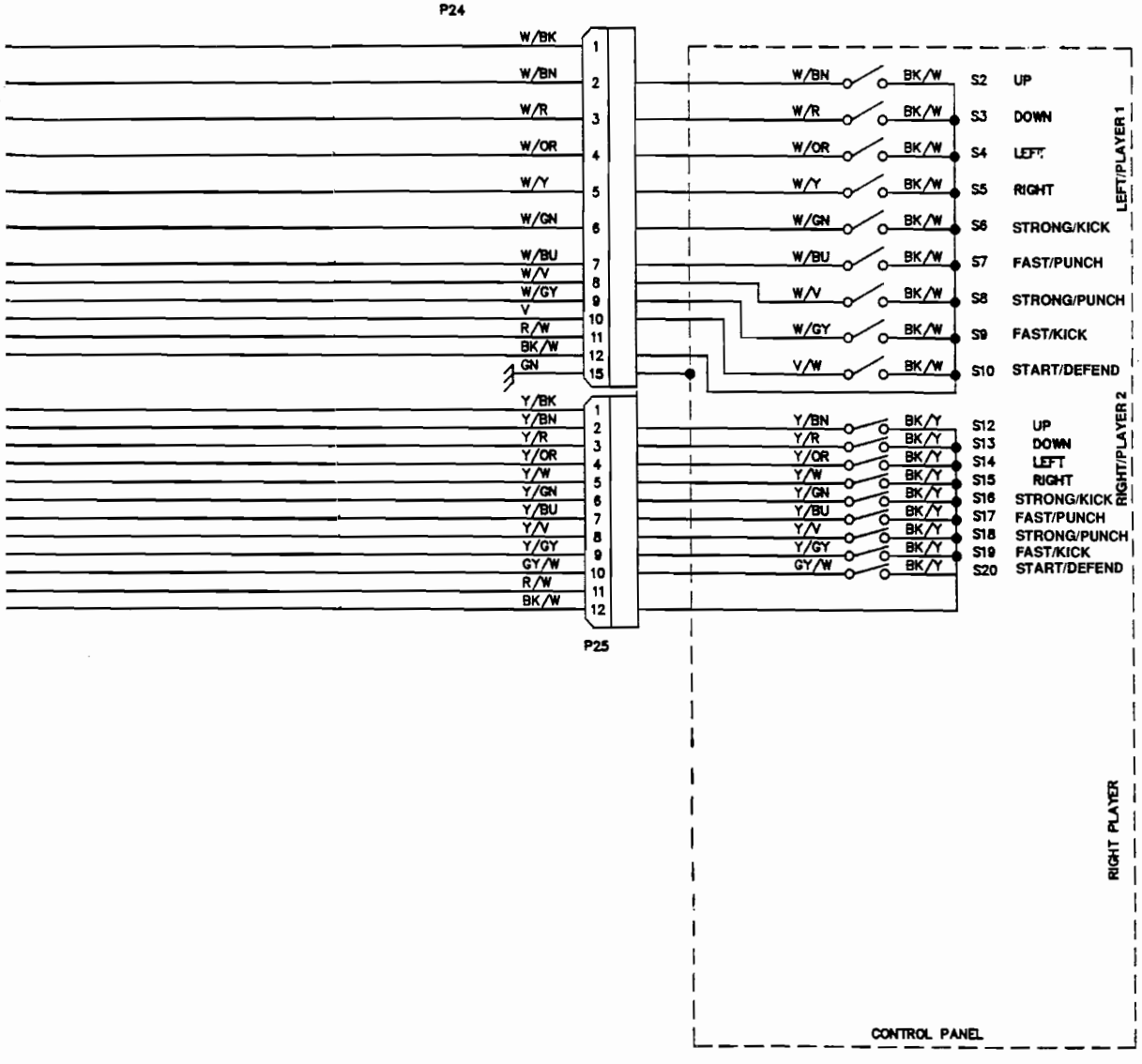


Figure 5-5 Game Main Wiring Diagram

050191-01 A

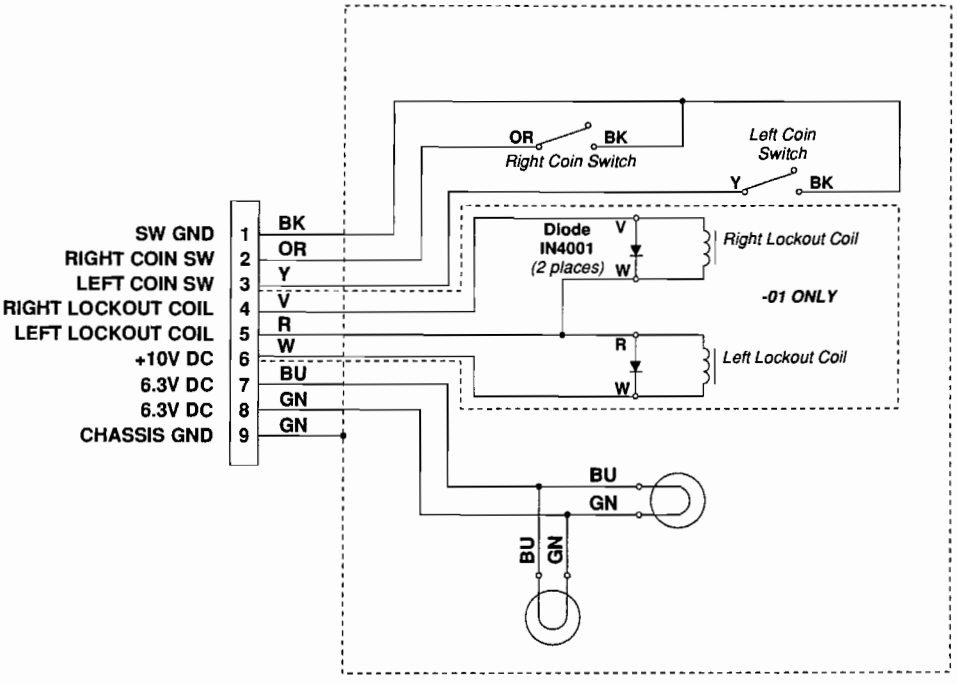


Figure 5-6 Over/Under Coin Door Wiring Diagram

A037542-XX F

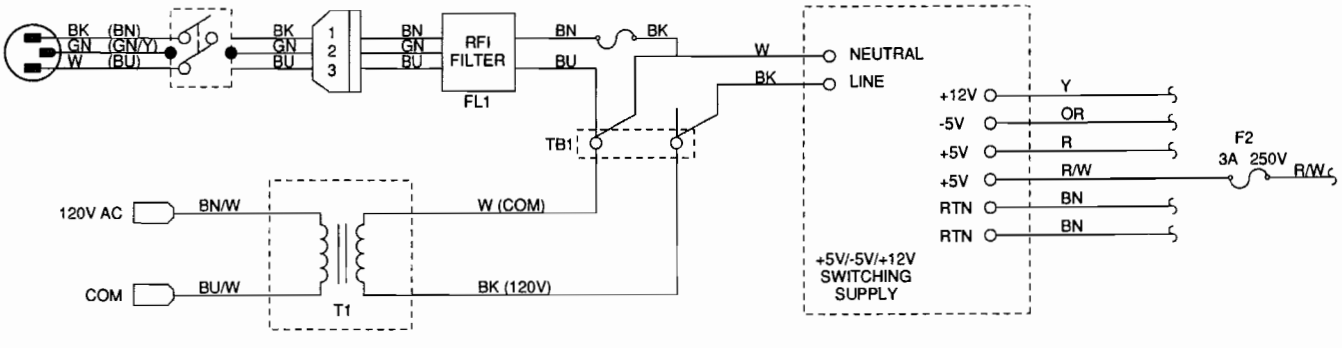


Figure 5-7 JAMMA Power Supply Wiring Diagram

049289-01 A

Guardians of the 'Hood™ Game Statistics Sheet

ATARI GAMES

Location: _____ Date Recorded: _____

Meter: _____

FIRST STATISTICS SCREEN

Left Coins:	_____	Sessions:	_____	Total Credits:	_____
Right Coins:	_____	New Games:	_____	Avg Time/Credit:	_____
Auxiliary Coins:	_____	Continued Games:	_____	Average Time/New Game:	_____
0 Player Mins:	_____	New (Game) Mins:	_____	Average Time/Cont'd Game:	_____
1 Player Mins:	_____	Cont'd (Game) Mins:	_____		
2 Player Mins:	_____	Error Count:	_____		

REMAINING STATISTICS SCREENS

Statistics 2: Round Counts and Average Times

Intro	____	____
Gym 1	____	____
Alley	____	____
Movie	____	____
Gym 2	____	____
Station	____	____
Subway Train	____	____
Gym 3	____	____
China Street	____	____
Bar	____	____
Gym 4	____	____
Boardwalk	____	____
Funhouse	____	____
Unused	____	____
Unused	____	____

New Game Time in Seconds

0–39	_____
40–59	_____
60–79	_____
80–99	_____
100–119	_____
120–139	_____
140–159	_____
160–179	_____
180–199	_____
200–219	_____
220–239	_____
240–259	_____
260–279	_____
280–299	_____
300–319	_____
320–339	_____
340–359	_____
360–379	_____
380–399	_____
400 & up	_____
Median	_____

Continuation Game Time in Seconds

0–39	_____
40–59	_____
60–79	_____
80–99	_____
100–119	_____
120–139	_____
140–159	_____
160–179	_____
180–199	_____
200–219	_____
220–239	_____
240–259	_____
260–279	_____
280–299	_____
300–319	_____
320–339	_____
340–359	_____
360–379	_____
380–399	_____
400 & up	_____
Median	_____

Continued on back page ➪

Guardians of the 'Hood™ Game Statistics Sheet, Continued

ATARI GAMES

Location: _____ Date Recorded: _____

Meter: _____

REMAINING STATISTICS SCREENS

Session Time in Minutes

0–2	_____
3–5	_____
6–8	_____
9–11	_____
12–14	_____
15–17	_____
18–20	_____
21–23	_____
24–26	_____
27–29	_____
30–32	_____
33–35	_____
37–38	_____
39–41	_____
42–44	_____
45–47	_____
48–50	_____
51–53	_____
54–57	_____
57 & up	_____

Median _____

Segment at Which Player Quit

0	_____
1	_____
2	_____
3	_____
4	_____
5	_____
6	_____
7	_____
8	_____
9	_____
10	_____
11	_____
12	_____
13	_____
14+	_____

Median _____

Who's the most popular — Wave 1

Conner	_____
Chief	_____
Javier	_____
Tanya	_____

Who's the most popular — Wave 2

Conner	_____
Chief	_____
Javier	_____
Tanya	_____
Jay-Jay	_____

Who's the most popular — Wave 3

Conner	_____
Chief	_____
Javier	_____
Tanya	_____
Jay-Jay	_____
Boris	_____

Who's the most popular — Wave 4

Conner	_____
Chief	_____
Javier	_____
Tanya	_____
Jay-Jay	_____
Boris	_____
Kwan	_____

Warranty

Seller warrants that its printed-circuit boards and parts thereon are free from defects in material and workmanship under normal use and service for a period of ninety (90) days from date of shipment. Seller warrants that its video displays and laser-video disc players (in games supplied with displays and video-disc players) are free from defects in material and workmanship under normal use and service for a period of thirty (30) days from date of shipment. None of the Seller's other products or parts thereof are warranted.

If the products described in this manual fail to conform to this warranty, Seller's sole liability shall be, at its option, to repair, replace, or credit Buyer's account for such products which are returned to Seller during said warranty period, provided:

(a) Seller is promptly notified in writing upon discovery by Buyer that said products are defective;

(b) Such products are returned prepaid to Seller's plant; and

(c) Seller's examination of said products discloses to Seller's satisfaction that such alleged defects existed and were not caused by accident, misuse, neglect, alteration, improper repair, installation, or improper testing.

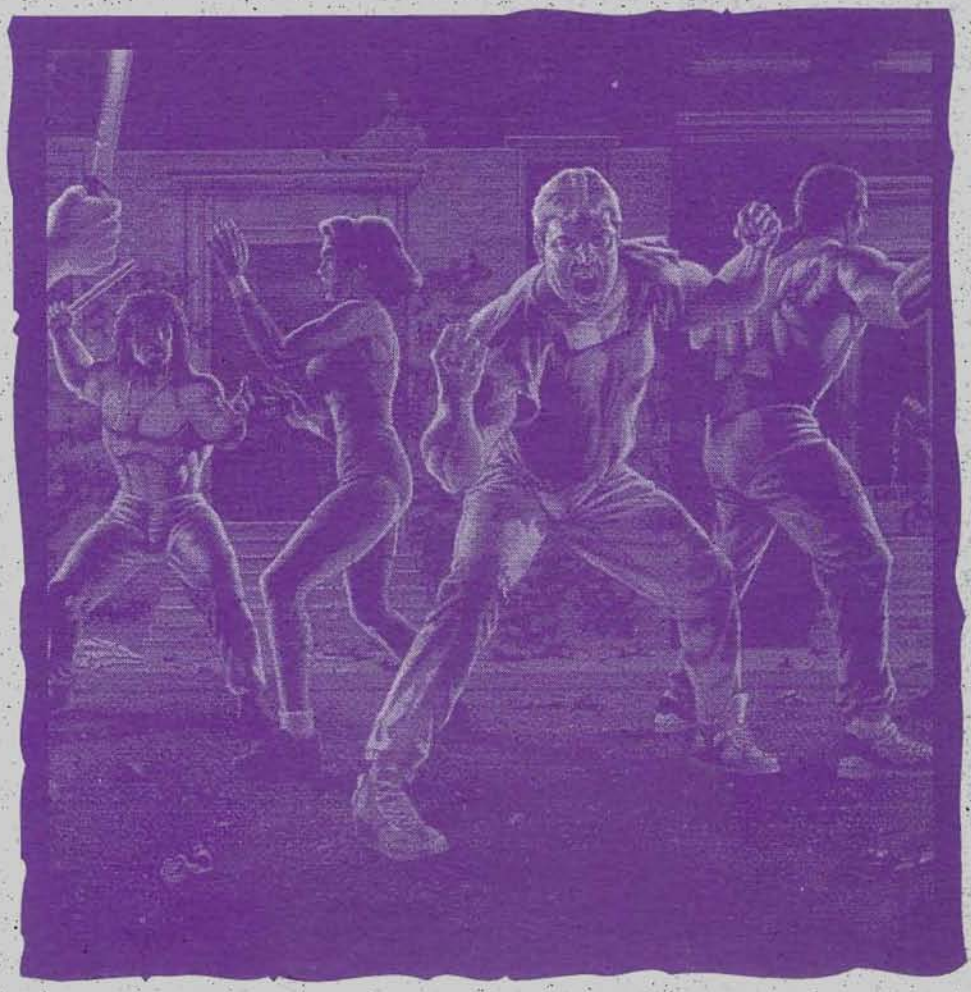
In no event shall Seller be liable for loss of profits, loss of use, incidental or consequential damages.

Except for any express warranty set forth in a written contract between Seller and Buyer which contract supersedes the terms herein, this warranty is expressed in lieu of all other warranties expressed or implied, including the implied warranties of merchantability and fitness for a particular purpose, and of all other obligations or liabilities on the Seller's part, and it neither assumes nor authorizes any other person to assume for the Seller any other liabilities in connection with the sale of products by Seller.

The use of any non-Atari parts may void your warranty, according to the terms of the warranty. The use of any non-Atari parts may also adversely affect the safety of your game and cause injury to you and others. Be very cautious in using non-Atari-supplied components with our games, in order to ensure your safety.

Atari distributors are independent, being privately owned and operated. In their judgment they may sell parts or accessories other than Atari parts or accessories. Atari Games Corporation cannot be responsible for the quality, suitability or safety of any non-Atari part or any modification including labor which is performed by such distributor.

ATARI®
GAMES



ATARI GAMES CORPORATION
675 Sycamore Drive
Milpitas, CA 95035